Biodiversity and Human Livelihoods in Protected Areas

Case Studies from the Malay Archipelago

Edited by Navjot S. Sodhi, Greg Acciaioli, Maribeth Erb and Alan Khee-Jin Tan

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Biodiversity and Human Livelihoods in Protected Areas: Case Studies from the Malay Archipelago

Protected areas have emerged as major arenas of dispute concerning both indigenous people and environmental protection. In the Malay Archipelago, which contains 2 of the 34 biodiversity hotspots identified globally, rampant commercial exploitation is jeopardizing species and livelihoods. While protected areas remain the only hope for the imperilled biota of the Malay Archipelago, this protection requires consideration of the sustenance needs and economic aspirations of the local people. Putting forward the views of all the stakeholders of protected areas – conservation practitioners and planners, local community members, NGO activists, government administrators, biologists, lawyers, policy and management analysts and anthropologists – this book fills a unique niche in the area of biodiversity conservation, and is a highly valuable and original reference book for graduate students, scientists and managers, as well as government officials and transnational NGOs.

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To the memory of Alfred Russel Wallace,

whose vision of the naturalist's project encompassed
evaluating the moral quality of human institutions.

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1

General introduction

NAVJOT S. SODHI, GREG ACCIAIOLI, MARIBETH ERB AND ALAN KHEE-JIN TAN

Just over 150 years ago Alfred Russel Wallace began his peregrinations as a naturalist across the vast extent of islands stretching from the Malay Peninsula in the west to New Guinea in the east, a region he labelled the Malay Archipelago.[1] In justifying his delay in publishing *The Malay Archipelago*, he noted that the region's 'social and physical conditions are not liable to rapid change' (Wallace 2000:ix). That characterization could not be less apt for the region's contemporary situation, especially in regard to the condition of the environment whose nineteenth-century richness he so scrupulously documented. Today that natural richness, which we now label biodiversity, is under increasing threat. Most of the area traversed by Wallace is now covered by two hotspots, 'earth's biologically richest and most endangered terrestrial ecoregions' (Mittermeier *et al*. 2004). It is a continuing tribute to Wallace that the border between this region's hotspots, Sundaland in the west and the eponymous Wallacea in the east, remains that remarkable line he delineated as dividing the two great natural regions of the archipelago (Wallace 2000:10–11).[2]

Worldwide, 34 biodiversity hotspots, defined as 'regions that harbour a great diversity of endemic species and, at the same time, have been significantly impacted and altered by human activities', have been identified as areas in critical need of conservation (http://www.biodiversityhotspots.org/xp/Hotspots). But these hotspots also tend to be the locales with high numbers of indigenous peoples whose land and resources have often been the targets of expropriation by their

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governments, previously in the name of 'national development', but increasingly now justified as well by conservation imperatives of national as well as global import.

The establishment and maintenance of protected areas have increasingly been regarded as essential for stemming the habitat loss and preserving the exceptional rates of plant and animal endemism that are criterial to hotspot status. However, such a strategy has not been without controversy. National parks and reserves, otherwise known as 'protected areas', have emerged as a major arena for the contestation of both environmental protection and indigenous/minority rights. Both transnational and local non-government organizations (NGOs) of environmentalist orientation, in concert with state and federal governments in the region, have argued for the establishment and extension of parks and reserves to protect resources in forested areas, wetlands and marine environments. But NGOs more focused upon issues of indigenous rights and agrarian justice have contested such claims, arguing instead for legal reform to allow resumption of control of such areas by local communities in accordance with the 'environmental wisdom' of local customs, as promoted by the global discourse of indigeneity. In more extreme cases, some organizations in the region have called for a moratorium on the establishment of further parks and sometimes the dismantling of already existing parks.

Despite an increasing awareness of the intimate relationships among biodiversity, ecosystem services, rural livelihoods, customary claims and political governance, the full range of relevant personnel dealing with these issues rarely have opportunities to interact. With the aims both of sharpening intellectual debate and attaining practical solutions to the problems of reconciling biodiversity conservation, sustainable development, customary resource use and evolving governance frameworks in the Malay Archipelago, we convened a workshop at the National University of Singapore entitled 'Conservation for/by whom: Social Controversies & Cultural Contestations regarding National Parks and Reserves in the Malay Archipelago' from 16–18 May 2005. At that workshop, conservation biologists, park managers, NGO activists and representatives of indigenous communities, lawyers, policy and management analysts, and anthropologists presented papers encompassing a variety of perspectives upon issues surrounding the establishment and impact of protected areas in this region. Given the range of participants, many lines of divergence emerged. This book has mostly emerged from that workshop, and, like the workshop, it juxtaposes the various views of the authors, drawing out divergences and convergences in perspectives concerning protected areas, and even suggesting some measures needed to surmount these differences. We offer this collection in the hope of clarifying debates concerning protected areas and increasing

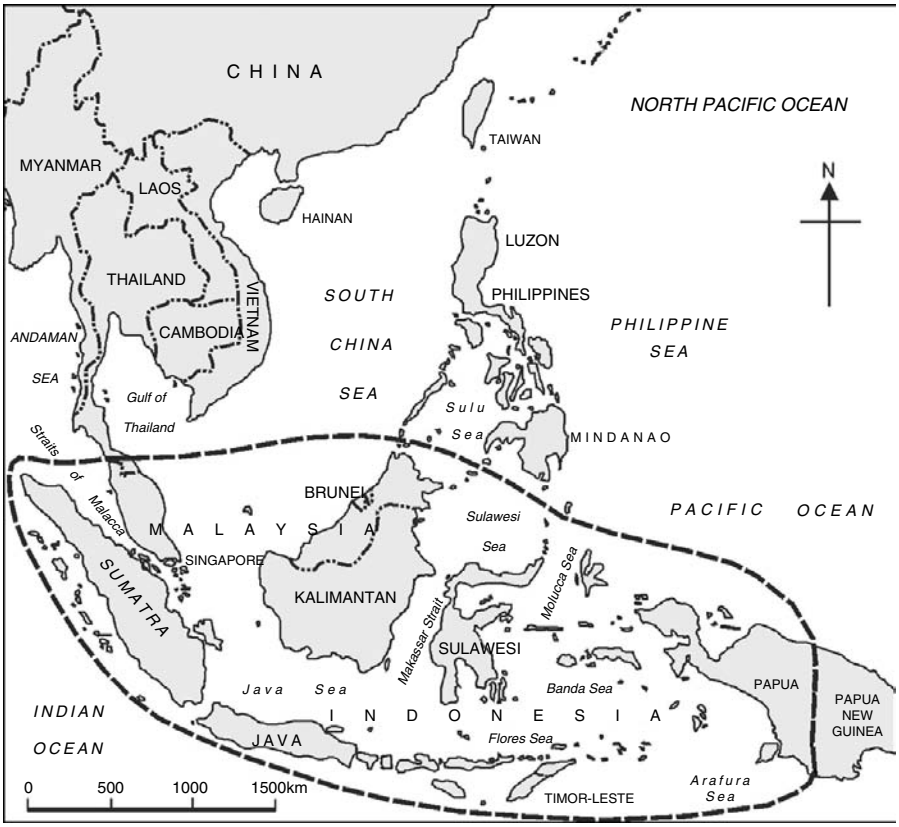

Figure 1.1. Map showing Southeast Asia and the Malay Archipelago (enclosed in a dashed line, as covered in the book) comprising the countries of Brunei Darussalam, Indonesia, Malaysia, the Philippines, Timor Leste and Singapore.

awareness of the underlying presuppositions and practical implications of the positions taken in these debates by conservation practitioners and planners, local community members, NGO activists and government administrators, as well as the range of academics from various disciplines who have focused upon problems of protected areas in their research. Although the issues involved are of global relevance, we feel that our focus upon the Malay Archipelago (Fig. 1.1), following in the footsteps of Wallace, allows a sharpened concentration and comparability among the case studies presented that will render the conflicting interests involved with greater intellectual coherence and facilitate envisioning appropriate resolutions with greater practical relevance to the region.

Protected areas of one sort or another remain the only hope for the imperilled biotas of the mega-biodiverse region of the Malay Archipelago, although optimum parameters of institutionalization, including appropriate legal

frameworks, in order to balance biodiversity protection with the claims of surrounding communities for sustainable livelihoods and agrarian justice, remain contested. Indeed, they provide the terms of debate for our book. The effectiveness and sustainability of protected areas will require not only effective measures of ecological protection, but also consideration of the subsistence needs and economic aspirations of the local peoples settled in and around such areas, as well as respect for their community resource rights and attention to formulating legal frameworks that can facilitate this balancing act.

In order to treat these issues with some measure of comprehensiveness, our book is situated at the interface of numerous disciplines, including conservation biology, legal studies, anthropology and political ecology. Although many of the papers are themselves multidisciplinary and encompass disparate views on protected areas – the most critical arena of tropical conservation – we have divided the book into three major parts that reflect dominant foci, though not exclusive orientations, in the papers included within each. Admittedly, due to the interdisciplinary nature of the book, the boundaries of sections are not always clear-cut, and there are some overlaps.

Part I (Conservation needs and priorities) foregrounds the biological aspects of biodiversity conservation in the region by exploring such questions as why the Malay Archipelago is a critical region for the preservation of tropical biodiversity. Why are protected areas crucial for the native biotas of the region? Through the use of case studies, examples are provided of how protected areas can be allocated, justified and better managed.

Part II (Conservation with and against people(s)) highlights the sociocultural dimensions of the establishment and impact of protected areas, especially such issues as the sustainability of livelihoods among members of local communities in and around national parks and other reserves. It explores alternative paradigms of environmental knowledge and institutional arrangements, including local notions of customary environmental management. Have indigenous ideas and local social institutions been sufficient to protect environments in the past? How can they be adapted and perhaps even accommodated to the scientific paradigm in order to confront the challenges of greater market demands for forest and marine products threatening environmental protection in the present and future? How have these new demands combined with changing legal frameworks, especially those establishing decentralization, to exercise an impact upon local communities' practices in regard to the environment? What misunderstandings and conflicts have arisen between proponents of differing paradigms of conservation, especially since the introduction of national parks and other reserves? Perhaps most importantly, what kinds of collaboration among local communities, local NGO activists, global conservation actors and

governments are needed to balance conservation in protected areas with sustainability of local livelihoods and vibrancy of local identities?

Part III (Legal and governance frameworks for conservation) focuses upon governance issues and analyses the laws, policies and institutions set up by governments for protected area management. It explores such problems as the failure of laws (and lawyers) to relate to the biological, sociocultural and political tensions inherent in protected area management. Underlying these concerns is the practical problem of how different government levels (federal/central, state/provincial and village/local) may actually be working at cross-purposes in law-making and policy-setting, rather than in a coordinated and coherent fashion. In particular, the political challenges of federalization in Malaysia and the more recent regional autonomy movement in Indonesia are assessed in relation to their impact on protected areas and local communities.

Despite the regional focus of our book, the issues discussed transcend geographic boundaries. We envisage our book as providing not only a forum for analysis of the various perspectives relevant to these problems, but also providing a basis for further dialogue among interested parties and the establishment of guidelines for at least mitigating, if not resolving, human and biodiversity conservation conflicts across most of the tropics.

End notes

1. Wallace had originally intended to travel to the Philippines as well, and he includes it in his map of the Malay Archipelago, but financial and temporal constraints prevented him from fulfilling this part of his plan. Although we would also have liked to include the Philippines within the scope of our volume, constraints on funding participants to the workshop on which this volume was based precluded this inclusion (Fig. 1.1). So, following Wallace, we have had to restrict our consideration to the current longstanding countries – Malaysia, Singapore, Brunei Darussalam, and Indonesia – that extend across the region, which he actually traversed. We regret as well the exclusion of Timor Leste, but as a new country it has only begun to consider the institutionalization of protected areas that we canvass in this volume.
2. The Philippines constitutes another hotspot on its own.

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Part I CONSERVATION NEEDS AND PRIORITIES

2

Introduction to Part I

NAVJOT S. SODHI

Although 12% of the planet's surface is protected, the global protected area network fails to encompass about a quarter of threatened vertebrate species that are in dire need of protection (Rodrigues *et al.* 2004). This result suggests that there may be a need to designate more protected areas, especially in the tropics where two-thirds of global biodiversity resides. Protected areas (reserves or national and regional parks) may be the only hope for retaining a reasonable proportion of residual tropical biodiversity (Bruner *et al.* 2001). However, major ongoing land conversion in the tropics will exert a massive negative impact on its biodiversity by the year 2100 (Sala *et al.* 2000). This anthropogenic land conversion is not limited to areas under no legal protection, as shown by DeFries *et al.* (2005). Using satellite imagery, they determined the habitat loss between the early 1980s and 2001 in 198 protected areas across the tropics that are critical for biodiversity (due to large size, a high level of protection and the presence of intact forests within the administrative boundary). Forest loss within and outside 'buffer' areas (the surrounding 50 km) was determined. Of the protected areas surveyed, 25% lost forests within their administrative boundaries, with 70% of them losing forests even in buffer areas. Buffer areas are critical as they dampen the negative effect of invasive species, fire and hunting in the protected areas. The loss of forest cover was most severe in South and Southeast Asia, with on average 4% and 6% loss of forest cover in and outside of the protected areas, respectively (DeFries *et al.* 2005). In this region, the canopy cover declined more rapidly in

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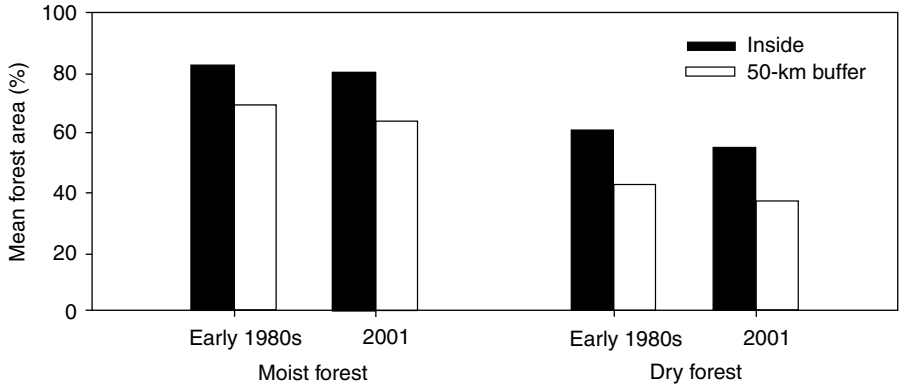

Figure 2.1. Loss of forest cover between the early 1980s and 2001 within and outside of protected areas of South and Southeast Asia. Data from DeFries *et al.* (2005).

and around protected areas containing dry forests than those areas with moist forests (Fig. 2.1).

As mentioned, we define the Malay Archipelago to be including the countries of Brunei, Indonesia, Malaysia and Singapore. These countries harbour the biodiversity hotspots of Wallacea (eastern Indonesia) and Sundaland (western Indonesia, Malaysia extending into southern Thailand, Singapore and Brunei) – containing a high number of endemic species of various taxonomic groups (Fig. 2.2). Worldwide, 34 biodiversity hotspots covering 16% of the planet's surface have been recognized as areas in critical need of conservation (http://www.biodiversityhotspots.org/xp/Hotspots). These biodiversity hotspots are defined as the regions that harbour a high diversity of endemic species and, at the same time, have been significantly impacted and altered by human activities (Myers *et al.* 2000). Large areas should be preserved in these areas to offer protection to the plethora of endemic species (Rodrigues & Gaston 2001). Overall, 20% of the forested land is protected in the Malay Archipelago (Table 2.1). This exceeds the global average of 12% but countries such as Malaysia are below this average. The further worry is that less than 0.05% of the marine area is protected regionally or in individual countries (Table 2.1). Clearly, more marine protected areas are needed in this region.

Further, it is not known if existing reserves receive adequate protection against activities such as illegal logging and poaching. Some so-called 'protected' forests in the Malay Archipelago have become isolated, degraded and/or deforested (Whitten *et al.* 2001; Curran *et al.* 2004). Protected lowland forests of the mega-biodiverse region of Kalimantan have declined by 56% (>29 000 km^2) between 1985 and 2001, due primarily to intensive logging (Curran *et al.* 2004). This forest decline is not restricted to the parks but has also occurred within

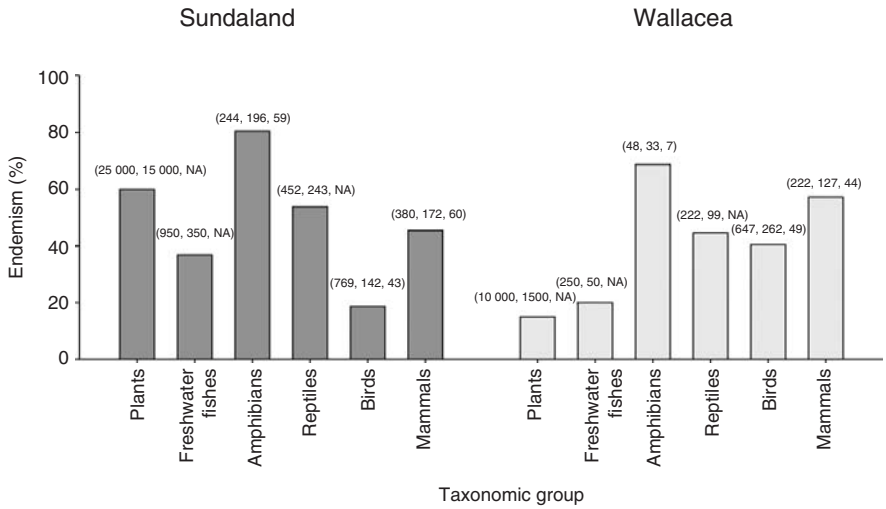

Figure 2.2. Percentage endemism in the Malay Archipelago. Numbers in parentheses represent total number of known species, number of endemic species and number of endemic threatened species (Conservation International 2005; http://www.conservation.org). 'NA' indicates data unavailable.

Table 2.1 *Terrestrial and Marine Protected Areas in the Malay Archipelago. Original Forest Areas are based on Billington* et al. *(1996). Current Forest Areas are based on Iremonger* et al. *(1997) and exclude disturbed natural forests and exotic plantations. Protected Forest Areas are based on World Conservation Monitoring Centre (WCMC) (2004). Territorial Sea Data are based on World Resource Institute (2005; WRI; http://www.wri.org). Marine Protected Areas are based on WCMC (2004)*

Country	Current Forest Area (000 ha) (% of Original Forest Area)	Protected Forest Area (000 ha) (% of Current Forest Area)	Territorial Marine Area (000 ha)	Marine Protected Area (000 ha) (% of Territorial Marine Area)
Malaysia	13 452 (41.1)	1528 (10.8)	15 236 700	501.2 (0.003)
Singapore	0.2 (0.3)	0.2 (100.0)	74 400	0.1 (0.0001)
Indonesia	91 134 (50.3)	19 318 (21.2)	320 569 500	13 007.1 (0.004)
Brunei	267 (50.7)	99 (29.9)	315 700	3.8 (0.001)
Total	104 853 (48.9)	20 945 (20.0)	336 196 300	13 512.2 (0.004)

the buffer areas – 70% of the forest cover was lost within a 10 km^2 buffer area surrounding the Gunung Palung National Park. As regenerating forest shows some potential for biotic recovery in certain areas, buffers, in addition to benefits mentioned above, could serve as excellent reservoirs to extend park boundaries.

Other studies illustrate similar problems faced by protected areas throughout the Malay Archipelago. Many protected areas in this region suffer from three main threats: illegal logging, encroachment by shifting cultivators and fires (http://www.fao.org). In Pulau Kaget Nature Reserve (Indonesia), excessive infringement by expanding farms has resulted in the loss of habitat for the threatened proboscis monkey (*Nasalis larvatus*). Translocation of these monkeys resulted in their demise from this reserve, and did not help them establish new populations elsewhere because it was ill-planned (to unprotected forests) and poorly executed (13 monkeys died during capture) (Meijaard & Nijman 2000).

O'Brien and Kinnaird (1996) surveyed selected bird and mammal species in Tangkoko-DuaSudara Nature Reserve (Sulawesi) in 1993/94, 15 years after this site was surveyed by MacKinnon and MacKinnon (1981). Tangkoko is isolated and by 1993/94 had lost almost half of its forest (O'Brien & Kinnaird 1986). Except the Sulawesi pig (*Sus celebensis*), all surveyed mammals declined in populations in this reserve in a short span of 15 years (Fig. 2.3). One mammal species, Javan rusa (*Cervus timorensis*) seemed to have been extirpated. Two of the bird species, maleo (*Macrocephalon maleo*) and red junglefowl (*Gallus gallus*) also

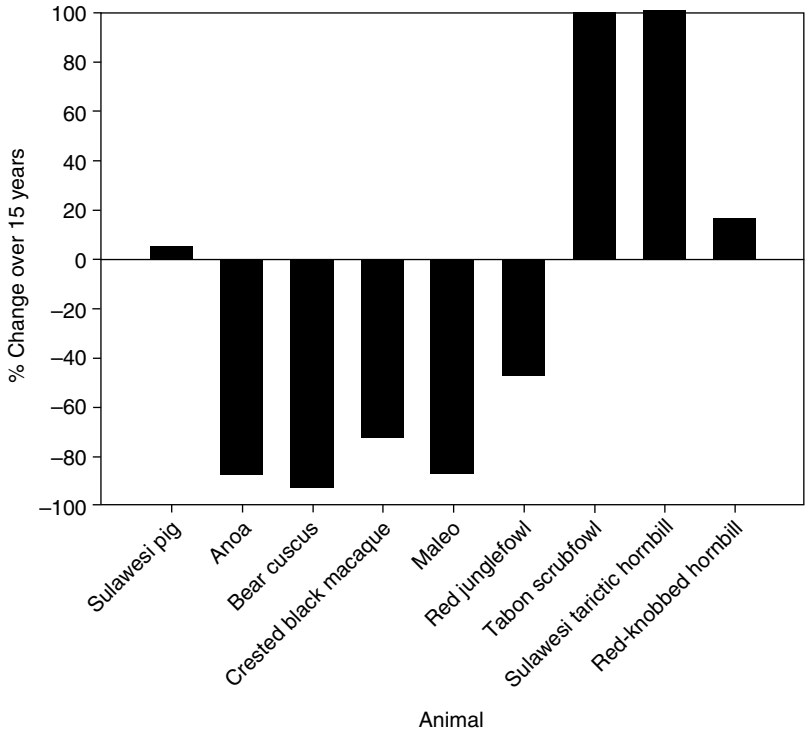

Figure 2.3. Percentage change in the population density of various bird and mammal species in Tangkoko (Sulawesi) between 1979 and 1994. (Reprinted with permission from O'Brien & Kinnaird 1996.)

declined in number during this period. O'Brien and Kinnaird argued that hunting was the main culprit of this decline as species not persecuted (e.g. red-knobbed hornbill, *Aceros cassidix*) did not show population declines. Supporting the above results, in the Tangkoko division of the reserve, endemic Sulawesi crested black macaques (*Macaca nigra*) have declined substantially from 300 individuals/km^2 in 1978 to 69 individuals/km^2 in 1994 (Rosenbaum *et al.* 1998). One of the main reasons for this decline seems to be overhunting: these macaques have been found caught in snare traps set for forest (wild) pigs (*Sus scrofa*). There are predictions that this macaque will be wiped out within the next 20 years if the current levels of hunting continue unabated (Lee *et al.* 1999).

What can be done to alleviate the effects of humans on biodiversity in the protected areas? Bruner *et al.* (2001) assessed the effects of humans on 93 protected areas in 22 tropical countries. They found that effective protection, vital for the biodiversity, can be achieved by variables such as the density of guards and compensation for the local communities. However, funding remains a major constraint for the protection of tropical wildlife. Currently, less than 5%

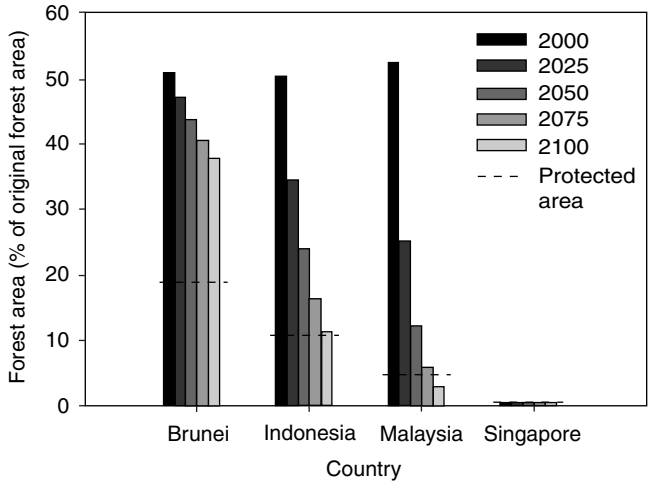

Figure 2.4. The proportion of forested cover that will be lost by the year 2100 across various countries in the Malay Archipelago. Data from World Resource Institute (WRI; http://www.wri.org). Projected forest cover in 2025, 2050, 2075 and 2100 based on natural forest losses reported by WRI for the period 1990–2000. Dashed line represents forest area under protection.

of the costs needed for effectively maintaining protected areas are being met in developing Asia out of an estimated total of $US6 billion spent each year on managing protected areas (Balmford *et al.* 2003). This paucity of funding should be disconcerting as in Southeast Asia, a region encompassing the Malay Archipelago, forest loss will likely increase with economic growth and human population (Sodhi & Brook 2006). It is predicted that by the year 2100, except for Brunei, most of the remaining forests will be in the protected areas (Fig. 2.4; Sodhi & Brook 2006). It is also predicted that there will be losses of endemic species if the current level of deforestation continues (Fig. 2.5; Sodhi & Brook 2006). Therefore, it is critical to 'protect' the existing protected areas in the Malay Archipelago and to increase the existing protected area network. A study from Lima Belas Estate Forest Reserve (Peninsular Malaysia) shows that protection does help biodiversity: a 76 ha lowland rain forest in the oil palm (*Elaeis guineenis*) plantations protected from hunting retained an extremely rich primary forest bird and mammal fauna (Bennett & Caldecott 1981). Further, Brook *et al.* (2003) projected a sad scenario in which the loss of protected areas in Singapore will accelerate the extinction of its residual biodiversity (Table 2.2). Intuitively, such projections will also be valid for other countries in the Malay Archipelago.

However, excluding people from protected areas is not always feasible because local communities have been relying on the resources contained within these areas for centuries. Does resource attraction by traditional indigenous people

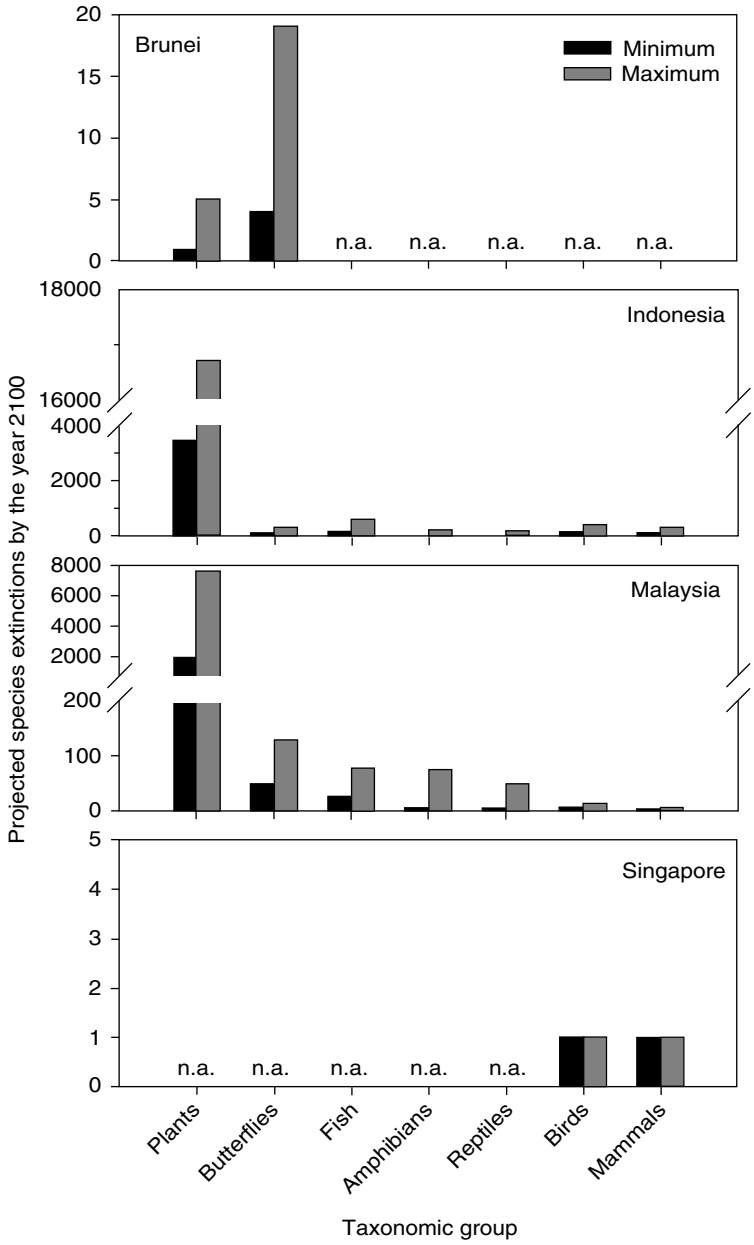

Figure 2.5. Projected extinctions of endemic species from various countries in the Malay Archipelago. Data from Sodhi & Brook (2006) and see this reference for more details.

Table 2.2 *The importance of protected areas for the residual biodiversity of Singapore (from Brook et al. 2003)*

Taxon	% (*n*) of species restricted to Singapore's reserves[a]	Total % extinct (increase) with loss of reserves
Vascular plants	Majority of native species (not quantified)	
Decapods[b]	81 (13)	87 (× 2.9)
Phasmids	100 (33)	100 (× 5.1)
Butterflies	63 (149)	77 (× 2.0)
Fish[b]	60 (21)	77 (× 1.8)
Amphibians	76 (19)	78 (× 10.5)
Reptiles	50 (59)	52 (× 10.7)
Birds	8 (12)	39 (× 1.1)
Mammals	46 (12)	69 (× 1.6)
Weighted mean	50 (312)	66 (× 2.1)

[a] Reserves are Bukit Timah (71ha), Nee Soon (935ha), MacRitchie (484ha), Lower Pierce Forest (50ha) and Botanic Gardens (7ha). Numbers in brackets are total number of species per taxon restricted to the reserves.

[b] Only freshwater species are included.

substantially impinge on wildlife populations in the protected areas? Alvard and Winarni (1999) studied the impact of traditional subsistence harvest by indigenous people called the Wana on birds in Morowali Nature Reserve (Sulawesi). There were several thousand Wana living in and around the reserve. These people have very little contact with the outside world, practise slash-and-burn horticulture, and obtain their protein by hunting and trapping animals. Their animal prey includes mice, birds, bats, reptiles, amphibians, ungulates and primates. Blowguns are used primarily for hunting birds. Alvard and Winarni (1999) found that the Wana's common bird prey included flowerpeckers, sunbirds, white-eyes and parrots. The more abundant a bird species was, the higher were its chances of being hunted by the Wana. Hunting does not seem to seriously affect the viability of bird populations in this area. Of the 46 prey species, 31 were more abundant at Wana occupied sites than in regions not experiencing bird hunting. Although habitat heterogeneity and differential detectability can also influence such a result, this study does suggest that traditional hunting practices may not cause heavy declines in prey (bird) populations. In another similar finding to the above, a low density of Aboriginal people using primitive hunting techniques (e.g. snares) with only limited access, appeared to be having little impact on tigers and their prey in Taman Negara National Park (Peninsular Malaysia; Kawanishi & Sunquist 2004).

The above cases, however, cannot be generalized for the region. For instance, a group of indigenous Penan people appear to have been responsible for the disappearance of an entire population of Bornean gibbons (*Hylobates muelleri*) from a primary forest in Sarawak (Bennett *et al.* 2000). Therefore, resource extraction from protected areas needs to be done in a sustainable manner so as not to harm wildlife populations. Belsky and Siebert (1995) explore whether it is possible for the local people to extract rattan (*Calamus exilis*) from the Kerinci-Seblat National Park (Sumatra). Rattan is a coppicing cane used in local handicrafts and basketry. If rattan extraction can provide local communities with a viable means of earning their livelihood, then there would be less incentive for them to convert the park to agriculture. Belsky and Siebert (1995) proposed that rattan can be extracted sustainably at four-year intervals from designated areas of the park.

Other studies also show the wisdom of sustainable harvesting. Good harvest management can certainly result in stable or increasing populations of swiftlets (*Collocalia* spp.), as illustrated in a study from south-central Vietnam (Casellini *et al.* 1999). Gelatinous swiftlet nests are considered a delicacy and used in soups or jellies. There has been a concern that swiflet populations have been declining in Southeast Asia due to overharvesting (Sodhi & Er 2000). The strict, sustainable nest-harvesting by a state-owned company in Vietnam has resulted in an increase in nest production of 3% per annum (Casellini *et al.* 1999). The nests are harvested in two phases. The first phase occurs when 10–15% of nests have eggs, as early harvesting means that most pairs can build a new nest. The second harvesting occurs after 160 days, when almost all nestlings have fledged. This is an excellent example of sustainable harvesting, as it minimizes the disruptive effects on the swiftlet population, whilst at the same time ensuring a high economic yield is delivered from the wildlife resource. Examples such as rattan and swiftlet extraction provide good illustrations of the practicability of coexistence of protected areas and local communities, and such should be considered as a feasible real-world option for shared land use across many parts of the Malay Archipelago.

In this part of the book, some of the issues raised above are addressed. There are nine chapters in this part and the brief organization of these is as follows.

Chapter 3 'Delineating Key Biodiversity Areas as targets for protecting areas' by Brooks *et al.* highlights the Key Biodiversity Areas (KBAs) approach to identifying potentially manageable conservation sites on the basis of such criteria as 'vulnerability' and 'irreplaceability'. Chapter 4 'A Master Plan for Wildlife in Sarawak: preparation, implementation and implications for conservation' by Gumal *et al.* reports on the Master Plan for conserving wildlife across Sarawak. In Chapter 5 'Indonesia's protected areas need more protection: suggestions

from island examples' Bickford *et al.* present a review of both the problems in protected areas and suggest approaches to successfully increase conservation effectiveness across Indonesia and the region. Chapter 6 by Lee *et al.* 'Birds, local people and protected areas in Sulawesi, Indonesia' reports on the efficacy of protected areas for endemic birds of Sulawesi (Indonesia). In Chapter 7 'Importance of protected areas for butterfly conservation in a tropical urban landscape' Koh reports on how protection of butterflies can be maximized in urbanized Singapore.

Chapter 8 by Kusworo and Lee 'Biodiversity conservation and indigenous peoples in Indonesia: the Krui people in southern Sumatra as a case study' explores the relationship between indigenous peoples and biodiversity conservation within the context of today's social and political landscape in Indonesia. Halim *et al.* in Chapter 9 'Involving resource users in the regulation of access to resources for the protection of ecosystem services provided by protected areas in Indonesia' describe the experiences with regulating use and allocating access rights in one terrestrial protected area and four marine protected areas in Indonesia. Finally, Chapter 10 provides a conclusion to Part I.

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3

Delineating Key Biodiversity Areas as targets for protecting areas

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Introduction

Biodiversity faces a crisis, with extinction rates approximately three orders of magnitude higher than those typical of the Earth's history (Pimm *et al.* 1995). This crisis has numerous negative consequences for humanity, including to economies, health, environmental services, and moral and spiritual well-being (Wilson 2002). The biodiversity crisis is particularly serious in Southeast Asia (Sodhi *et al.* 2004; Sodhi & Brook 2006), where wholesale extinctions are already in the process of unfolding (Brook *et al.* 2003). Among a large number of causes of these extinctions, the destruction of natural habitats is the most pervasive, affecting 90% of all threatened species (Baillie *et al.* 2004). Given this, it is clear that the primary tactic necessary to stem the crisis is to safeguard sites of global biodiversity significance. This has received intergovernmental mandate, with, for example, the 188 parties to the Convention on Biological Diversity agreeing on a Programme of Work on Protected Areas (http://www.biodiv.org/programmes/cross-cutting/protected) to support the establishment and maintenance 'of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas' (Decision VII/28). However, this raises the question of how these sites can best be identified and delineated.

This chapter addresses this question. We begin by explaining the variety of factors that require consideration in the identification of those areas requiring

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site safeguard. Next, we show how the approach of identifying and delineating Key Biodiversity Areas (KBAs) emerges from these considerations. Finally, we discuss the issue of how KBAs can best be delineated. Throughout, we provide examples from ongoing work in the identification of KBAs in the Malay Archipelago.

Considerations in targeting sites for conservation safeguard

The issue of how to set targets and priorities for conservation has formed a major component of the conservation biology literature over the last decade, as the subdiscipline of systematic conservation planning (Pressey *et al.* 1993). Margules and Pressey (2000) outlined a framework for systematic conservation planning based on 'vulnerability' and 'irreplaceability'. Vulnerability measures the threat to a given biodiversity feature – the likelihood that it will be lost in the absence of intervention (Pressey & Taffs 2001). Irreplaceability measures the uniqueness of a biodiversity feature – the degree to which conservation options will be lost if that feature is lost (Pressey *et al.* 1994). Broadly, in order to maximize the amount of biodiversity retained, conservation should therefore target features of high vulnerability (because options for their conservation are limited in time) and high irreplaceability (because options for their conservation are constrained in space). This framework is now used in some form or another in most applications of systematic conservation planning. For example, it is used at the global scale to identify broad regional biodiversity hotspots as priorities for globally flexible investment (Myers *et al.* 2000).

Within this framework, a number of factors require consideration in determining the specific conservation planning methodology to be used to identify priorities for safeguarding sites. These include the degree of repeatability required, the types of biodiversity surrogate to be used, the type of error that should be minimized, and the spatial units of analysis. Different approaches have been taken to address each of these considerations in the literature and in practice. Here we discuss the implications of each, illustrating these where possible with examples from the Malay Archipelago and elsewhere.

Degree of repeatability

Historically, most conservation planning decisions were made in an ad hoc fashion, based on a variety of factors over and above vulnerability and irreplaceability, including opportunity, scenery and tourism potential, and the influence of lobby groups (Pressey 1994). Through the 1990s, this decision-making process coalesced into one largely comprising expert workshops.

The workshop forum provides a number of advantages, including the consideration of conservation targets at a regional level (rather than site by site), the strengthening of peer relationships, and the consensus nature of the final conservation plan (Hannah *et al.* 1998). A good example of such a workshop process was that held in the Philippines in 2000 – the Philippine Biodiversity Conservation Priorities Process (Ong *et al.* 2002).

The main disadvantage of expert opinion-based conservation planning is its lack of repeatability. Repeatability allows for transparency and accountability, allowing others to assess how conservation decisions were reached, arrive at the same set of answers given the same data and set of criteria, and challenge these results on this basis if necessary. The alternative to expert opinion-based approaches is therefore data-driven planning. It is clear that data availability and quality varies tremendously around the world, and is often poorest in regions of high conservation priority (Jones 1995). Nevertheless, the explicit acknowledgement of these data gaps and biases allows provision to be taken for their reduction.

Types of biodiversity metric

Biodiversity is complex, comprising a continuum of scales of ecological organization from the genetic level up to the entire biosphere, although some argue that the species is the fundamental unit of biodiversity (Wilson 1992). Biodiversity metrics representing habitats, ecosystems, biomes and other subdivisions of environmental space are commonly used in conservation planning, because advances in remote sensing technologies now allow these to be measured quite comprehensively over the planet's surface (Turner *et al.* 2003). Some also argue that such environmental classification acts as a good surrogate for species measures (Higgins *et al.* 2004), although the only rigorous test of this to date found that surrogacy was poor (Araújo *et al.* 2001). Moreover, it remains unclear how and where to set site scale conservation targets based on environmental classifications (Brooks *et al.* 2004a). The use of flat percentage targets (e.g. 10%) has been roundly rejected as being wholly inappropriate, because of uneven distribution of biodiversity (Rodrigues *et al.* 2004). A few studies now use variable percentage targets (Desmet & Cowling 2004), but, in the results that these studies produce, it remains unclear where within a given environmental class sites should be targeted for conservation.

In contrast to environmental classifications, it is currently impossible to measure species diversity and distributions comprehensively – all species data are plagued by enormous sampling biases (Nelson *et al.* 1990). Further, the considerable debate over species concepts (Isaac *et al.* 2004) has the potential to

destabilize conservation planning based on species (Collar 1996), although the variability among units considered as species is far less than that among environmental classifications. In spite of these problems, species-based approaches to conservation planning have the fundamental advantage of being able to pinpoint specific sites as targets for conservation, based on the needs of the species that occur there (Brooks *et al.* 2004a). Our recommendation is therefore that identification of conservation sites should be based first and foremost on species data (Brooks *et al.* 2004b). Some cutting-edge techniques for combining environmental with species data show promise (Ferrier *et al.* 2004), but these have yet to be extensively field tested.

Types of error

All approaches to targeting sites for conservation safeguard yield error. However, errors are not all the same, and some are much more serious than others in conservation planning. False negative ('omission') errors will mean that important sites for conservation are excluded from a conservation plan, while false positive ('commission') errors will mean that species can be considered represented in places where they do not occur. The implication of omission errors is that networks of site scale conservation targets will not be optimally efficient in representing biodiversity. On the other hand, the implication of commission errors is that biodiversity could become extinct, unnoticed, while considered safe at sites where it does not actually occur.

These types of error weigh differently depending on the method used for handling data. Point locality data are subject to high omission errors (Peterson *et al.* 1998). These may result in lost opportunities to safeguard particularly healthy populations of a threatened species, but will never mean that a known species is wholly missed by conservation action. Conversely, extrapolations – for example, through 'extent of occurrence' species range maps derived from specialist opinion, and through species distribution models – are subject to high commission errors (Loiselle *et al.* 2003). Given that the latter could result in extinction even of known species, it seems prudent to identify sites for conservation safeguard using known point locality data. This said, species distribution modelling techniques show considerable promise for identifying priority areas for research through field survey (Raxworthy *et al.* 2003).

Spatial units of analysis

A final important consideration in targeting sites for conservation concern is selecting the spatial units of analysis. Much of the theoretical work in the field has used grid cells as spatial units, because the possibility of using

equal area cells facilitates the exploration of hypotheses regarding underlying biogeography (e.g. Brooks *et al.* 2001). Other a-priori subdivisions of areas for conservation planning, for example, into hexagons, or watersheds, are also sometimes used.

While grid cell-based approaches are analytically rigorous and mathematically elegant, they suffer a fundamental drawback in that they are irrelevant to management on the ground (or in the water). The alternative approach is to subdivide space subsequent to the assessment of localities of conservation importance, based on the needs of the biodiversity for which any given site is identified as important, and on actual management. In sum, our contention is that the most appropriate approach to targeting site safeguard measures is to use data on species occurrences in actual or potential management units.

Key Biodiversity Areas as targets for safeguarding sites

This approach has in fact been used for more than two decades, through the Important Bird Areas (IBAs) programme (http://www.birdlife.org/action/science/sites/index.html) of the BirdLife International partnership (Osieck & Mörzer Bruyns 1981). National IBA directories have been published for at least 50 countries, with continental inventories produced for Europe (Heath & Evans 2000), the Middle East (Evans 1994), Asia (BirdLife International 2004), Africa (Fishpool & Evans 2001) and the Andes (Boyla & Estrada 2005), and under development elsewhere. Several projects have recently been developed to extend the IBA approach to other taxa. These include Prime Butterfly Areas (van Swaay & Warren 2003), Important Mammal Areas (Linzey 2002) and Important Sites for Freshwater Biodiversity, with prototype criteria developed for freshwater molluscs and fishes (Darwall & Vié 2005). PlantLife International (2004) have invested considerable attention in the identification of Important Plant Areas (IPAs) (http://www.plantlife.org.uk/html/important_plant_areas/important_plant_areas_index.htm), which is particularly important given that the fifth target of the Global Strategy for Plant Conservation (http://www.biodiv.org/programmes/cross-cutting/plant) of the Convention on Biological Diversity (Decision VI/9) specifically mandates 'protection of 50% of the most important areas for plant diversity assured' by 2010. Work is also underway to examine the identification of KBAs in the marine environment.

As these initiatives have progressed, it has become increasingly clear that a global standard is necessary for site scale conservation to provide a framework for the numerous taxon specific efforts. To this end, a number of organizations have been collaborating to develop the concept of KBAs as targets for safeguarding sites. The scientific rationale for this is now established

(Eken *et al.* 2004), comprehensive guidelines in preparation (Langhammer *et al.* 2007) and work underway to build from existing IBAs to incorporate other taxonomic groups towards the identification of KBAs in many parts of the world. For example, in 2003, the Critical Ecosystem Partnership Fund (http://www.cepf.net) instituted a requirement that KBA definition underlie its Ecosystem Profiles (five-year investment strategies). Meanwhile, the Alliance for Zero Extinction (AZE; http://www.zeroextinction.org) has brought together more than 40 biodiversity conservation NGOs to identify and conserve the highest priority KBAs – those sites holding >95% of the global population of one or more Critically Endangered or Endangered species (Ricketts *et al.* 2005).

Key Biodiversity Area identification and delineation is a bottom-up process that is typically led from the country level, to maximize national ownership and probability of subsequent conservation actions to address the conservation of these sites. In some cases, it has also been undertaken at the subnational level (e.g. for provinces or states) and the regional level (e.g. for several adjacent countries). However, this local implementation follows globally standard criteria and thresholds, to ensure comparability of KBAs around the world. These criteria utilize the framework for systematic conservation planning described earlier as based on vulnerability and irreplaceability. Key Biodiversity Area identification is also an ongoing, iterative process, which forms the basis for monitoring (see below).

Vulnerability criterion

A single vulnerability criterion is used for the identification of KBAs: the presence of globally threatened species, as reported by the IUCN Red List (IUCN 2006; http://www.iucnredlist.org). The IUCN Red List has more than four decades of history, and over the last decade has evolved from specialist judgements of the extinction risk of individual charismatic species to comprehensive evaluation of entire taxa, applying the best available data to quantitative criteria and thresholds, and requiring extensive supporting data (Lamoreux *et al.* 2003). Approximately 40 000 species (including all birds, mammals and amphibians) have now been evaluated worldwide, with 16000 of these evaluated as falling into one of three categories of threat: Critically Endangered, Endangered or Vulnerable (Baillie *et al.* 2004).

For the identification of KBAs for Critically Endangered or Endangered species, a very low threshold is used, such that confirmed presence of such highly threatened species is all that is necessary to trigger the identification of a KBA. Thresholds have yet to be finalized for the identification of KBAs for Vulnerable species. The threshold currently in use by BirdLife International for IBA

identification is 10 pairs or 30 individuals, and this is proposed for testing for KBA identification (Eken *et al.* 2004).

Irreplaceability criteria

Three irreplaceability criteria have been developed for KBAs, and are already being implemented for IBAs. These consider biodiversity at three levels of organization. The first is a species-level measure, aimed to identify sites of global significance for species that have absolutely restricted ranges. Stattersfield *et al.* (1998) defined restricted-range species as those with global distributions of $<50\,000\,km^2$. Eken *et al.* (2004) proposed a preliminary threshold of 5% of the global population of a restricted-range species in a site as significant enough for KBA designation.

The second measure of irreplaceability is intraspecific, aimed at identifying those sites where significant proportions of the global population of a single species either congregate, as in breeding aggregations, or pass through, as in migratory bottlenecks (Mittermeier *et al.* 2003). The Ramsar Convention (http://www.ramsar.org) widely uses a threshold of 1% of the population to identify such sites (Ramsar Convention Secretariat 2004). The third irreplaceability criterion is a biogeographic one, variously referred to targeting bioregionally restricted assemblages or contextual species richness. It is currently unclear what resolution of bioregions will be most useful for this criterion (broad-scale biomes have been used for IBAs and fine-scale habitat classifications for IPAs) but ecoregions (Olson *et al.* 2001) may be suitable.

Delineating Key Biodiversity Areas

While assessment of species locality data against the KBA criteria is difficult, another challenge in the identification of KBAs is their delineation. As explained above, a defining factor of the KBA approach is that it uses spatial units of relevance to conservation management. However, this is clearly not independent of assessment of KBAs against the criteria – anywhere on the planet could be identified as a KBA if its boundaries were stretched far enough that the 'site' met the criteria. How, then, can KBAs be delineated in a way that is both repeatable and conservation relevant?

The first stage is to identify, for each species under consideration, those existing protected areas that meet the criteria as KBAs. A 'protected area' is defined by IUCN (The World Conservation Union) (IUCN 1994) as 'An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed

through legal or other effective means', and listed and mapped in the World Database of Protected Areas (http://sea.unep-wcmc.org/wdbpa). Many existing protected areas will therefore be identified as KBAs (although not all, because some protected areas are designated as such for purely cultural reasons – which of course have value in their own right – rather than for biodiversity). This will include community-managed areas and private reserves, as well as government-designated protected areas of all types.

In many cases, of course, existing protected areas do not correspond perfectly to the relevant area of biodiversity significance, either because some important localities lie just outside a protected area, or because a large portion of a protected area constitutes unsuitable habitat for the biodiversity for which it triggers KBA status. In cases where large portions of an existing protected area constitute unsuitable habitat for the species in question, the entire protected area will still generally be used as the boundary of the KBA; however, the protected area can then be zoned based on the habitat requirements of species for which it is important (and this zonation can be taken into account during planning for implementation). In cases where some important localities lie just outside of the protected area, the delineation will depend in part on political or management considerations. Where it is politically more feasible to expand an existing protected area than to declare a new one, KBA delineation should follow the extent of relevant habitat for the trigger species (and the proposed conservation actions for the KBA should include the expansion of the protected area). In cases where it is politically easier to declare a new protected area than to expand an existing protected area, the KBA delineation should follow the boundaries of the existing protected area. The localities adjacent to the KBA would then lead to the delineation of one or more additional KBAs, as long as these sites also meet the relevant criteria and thresholds for KBA identification.

Clearly, many localities triggering the KBA criteria fall outside of existing protected areas. This will require consideration of the needs of the species for which the site is important, mediated by information on actual or potential management. In regions of stable, clearly demarcated tenure, it will often be possible to identify KBAs as land-management units such as indigenous territories, private ranches or military reservations. Often, however, tenure is complex or overlapping, and it is necessary to decide between different potential socioeconomic boundaries of a KBA based on which boundary delineates an area most clearly necessary for the species for which the area is important. In some cases where tenure systems are weak or non-existent, KBAs can be delineated based solely on necessary habitat – as a mountain or a lake, for example – with further refinement based on management needs once data becomes available, or at the site-planning stage. In such cases, KBA boundaries

would be identified as being preliminary, and should exclude clearly unsuitable habitat within a site, and include significant localities if they fall just outside it.

While these guidelines will clearly result in KBAs of different boundaries being identified in different regions, the important issue is that any one KBA would be delineated in the same way by different assessors, or indeed by the same assessor over time. This said it is clear that delineation will require continual documentation of assumptions, and an iterative approach through which site boundaries are progressively modified through discussions with local stakeholders over time.

Progress to date in the Malay Archipelago

The most advanced component of KBA identification in insular Southeast Asia is for IBAs, which have been identified for the entire region (BirdLife International 2004) with the exception of Papua. Alliance for Zero Extinction sites have also been identified region-wide. Important Bird Areas have also been identified for the Philippines (Mallari *et al.* 2001) and the Indonesian islands of Sumatra (Holmes & Rombang 2001), Kalimantan (Holmes *et al.* 2001) and Java and Bali (Rombang & Rudyanto 1999), with progressively refined delineation for the Philippines (De Alban 2006). Figure 3.1 summarizes this progress to date across the Malay Archipelago's three regional biodiversity hotspots (Myers *et al.* 2000). Work on the identification of IPAs is under discussion, but has not yet been implemented. Meanwhile, this work is undergoing expansion to incorporate threatened species from other taxonomic groups for Sumatra and the Philippines, to move towards KBA identification (Brooks *et al.* 2005).

Conclusions

The identification and delineation of KBAs as targets for safeguarding sites is clearly just the first step in an iterative conservation process. Following identification, it is clearly essential to prioritize actions among the full suite of KBAs within a given country or region, and conduct a gap analysis of existing implementation measures to determine where investment should be made most urgently. This must be followed by actual implementation of these safeguard measures. These will sometimes involve the establishment of new protected areas or improved management of existing ones, but sometimes also the development of informal safeguard strategies with communities and private landowners. Moreover, this implementation must be continually supported by monitoring, to distinguish changing knowledge from genuine change in status, and hence allow for adaptive management. Without the implementation of

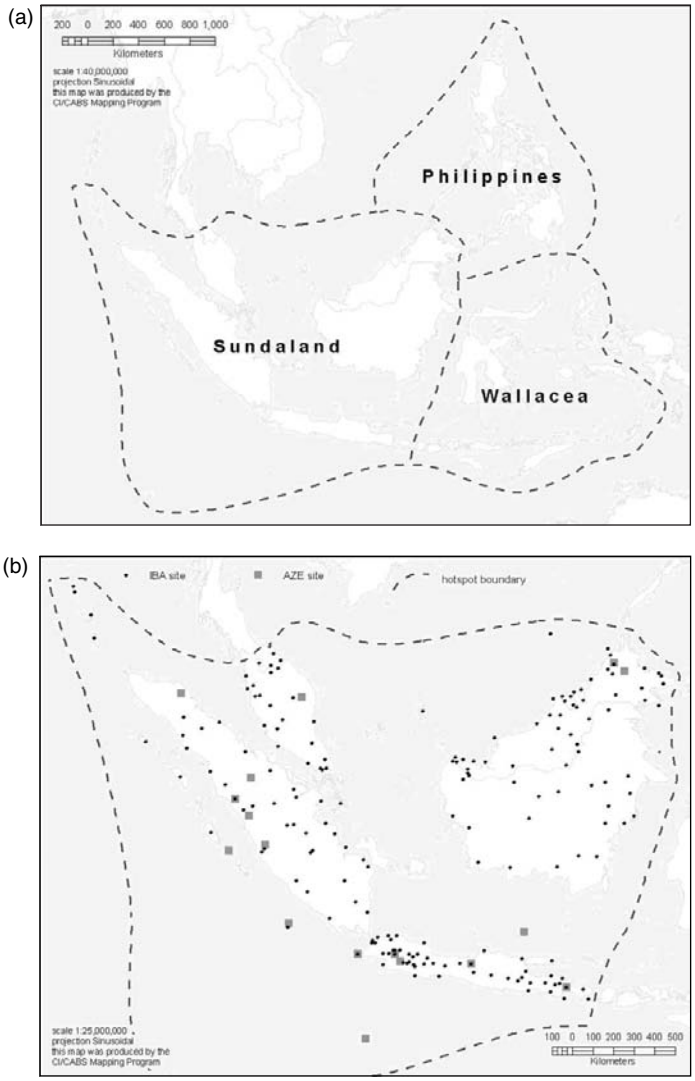
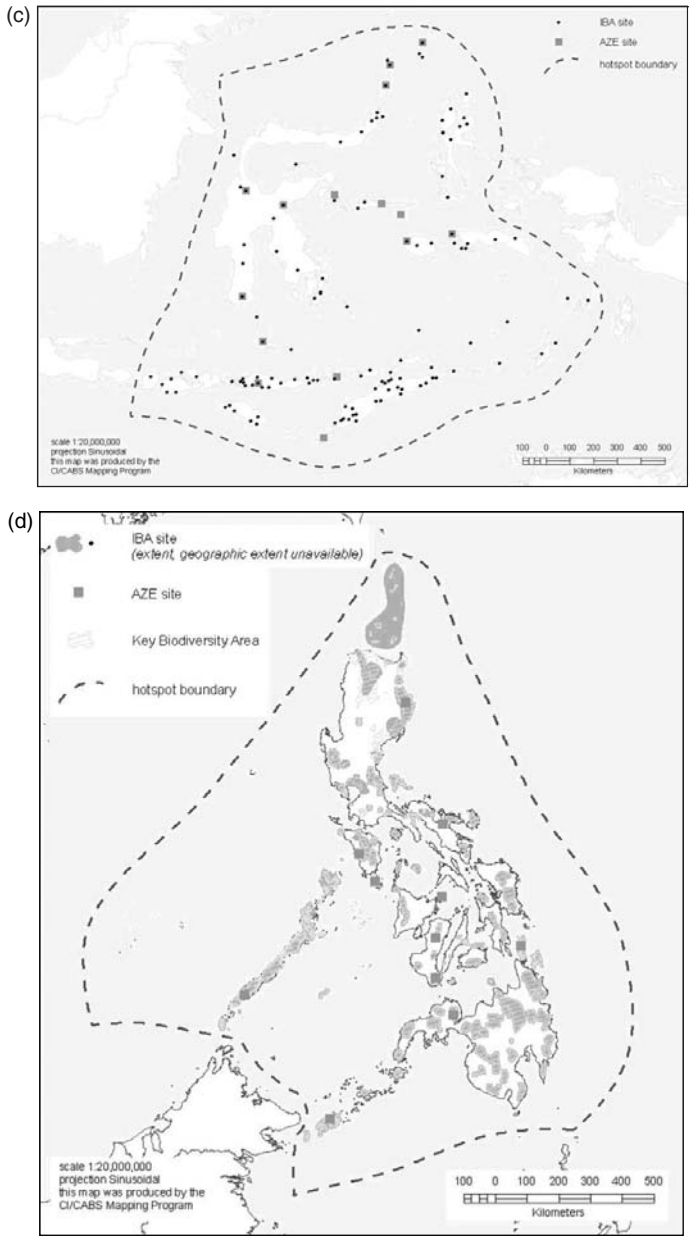


Figure 3.1. Key Biodiversity Areas (KBAs) of the Malay Archipelago. (a) The Malay Archipelago includes three biodiversity hotspots (Myers *et al.* 2000): the Philippines, Sundaland, and Wallacea. (b) KBAs in the Sundaland hotspot, in Indonesia, Malaysia and Brunei. Important Bird Areas (IBAs) (the subset of KBAs for birds) have been identified in Indonesian provinces except Papua, and are represented by black circles. Alliance for Zero Extinction (AZE) sites (the subset of KBAs requiring the most urgent conservation attention) have been identified throughout the hotspot, and are represented by grey squares. Key Biodiversity Area identification and delineation for other taxa is in progress for Sumatra. (c) KBAs in the Wallacea hotspot, in Indonesia. IBAs (black circles) and AZE sites (grey squares) have been



Caption for Fig. 3.1 (cont.)
identified for this hotspot. (d) KBAs in the Philippines hotspot. In the Philippines, the Haribon Foundation has identified and delineated IBAs (grey polygons). Conservation International – Philippines, in partnership with the Haribon Foundation, is in the process of delineating KBAs (hatched polygons).

such conservation action following the identification of sites, their safeguard is in no way assured, as in the tragic case of the deforestation of more than half of Taman Nasional Gunung Palung in Kalimantan between 1985 and 2001 (Curran *et al.* 2004).

Clearly, while the site-scale conservation of KBAs will necessarily play a major role in addressing the biodiversity crisis, it will not address all issues. Key Biodiversity Area conservation must often be complemented by species-specific conservation for those species threatened by drivers over and above habitat, such as exploitation and invasive species. This could involve *ex situ* techniques in zoos or botanic gardens, or could involve specific activities such as educational campaigns or the eradication of invasive species. In the longer term, it will also be essential to complement site and species conservation with management at the landscape and seascape scales, to ensure the persistence of area-demanding threatened species and of the ecological processes that maintain KBAs, and to minimize the harmful effects of habitat fragmentation and climate change.

Finally, while this chapter (and indeed, volume) concentrates heavily on the planning and implementation of conservation, we suspect that KBAs will play an even more important role across multiple sectors of society in the longer term. For industry, KBAs provide protection in the form of a watch list of sites of particular biodiversity significance, at which to avoid or minimize development. Maybe even more importantly, KBAs provide a focus for poverty alleviation and local communities in conservation, through recognition, livelihood development, civil pride and the formation of site-support groups (e.g. Mwangi 2004). In the long term, the conservation of KBAs will only succeed with such support from the people living around them.

Summary

The most severe threat to biodiversity is habitat loss. Protecting areas of global significance is therefore essential if we are to conserve biodiversity. It is now broadly agreed that methods for identifying such areas should consider 'vulnerability' (the likelihood that a site's biodiversity value will be lost) and 'irreplaceability' (the degree to which conservation options will be lost if a site is lost). Based on these principles, the Key Biodiversity Areas (KBAs) approach to identify targets for site-scale conservation is increasingly widely used. Key Biodiversity Areas are sites that are actually or potentially manageable for conservation, identified using data, criteria and thresholds on the presence of species requiring conservation at the site scale, following the conservation-planning framework of vulnerability and irreplaceability. A major challenge in the identification of KBAs is often their delineation, which must

balance biological with socioeconomic information in order to maximize both objectivity and conservation relevance. Key Biodiversity Area delineation typically begins with those sites within existing protected area systems that meet the KBA criteria. Beyond existing protected areas, KBA delineation should be driven by the spatial needs of the species for which the KBA is identified, mediated by the land-management units that most closely incorporate such habitat. To date, KBAs have been delineated for birds across the Malay Archipelago, and efforts are underway to incorporate data from other species groups (plants, mammals, reptiles, amphibians and fish). While these KBAs represent targets for safeguarding the biodiversity of sites, the tactics for achieving this will vary from the establishment of strictly protected areas through a wide variety of other management regimes. Safeguarding KBAs is not the only strategy necessary for conserving biodiversity – for example, some species are threatened by specific threats like hunting or disease so their conservation will require specific actions to address these, while others demand too much area to be conserved in individual sites and so will require landscape-scale interventions – but it is the essential first step.

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4

A Master Plan for Wildlife in Sarawak: preparation, implementation and implications for conservation

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Introduction

Considerable research has been conducted on the causes of wildlife decline in the Malaysian State of Sarawak on the island of Borneo (e.g. Dewan Undangan Negeri 1985; Caldecott 1988; Bennett 1992; Meredith 1993; Bennett & Dahaban 1995; Dahaban 1996; Bennett *et al.* 2000). These studies documented the decline of many species, and the importance of wildlife to rural peoples and to the State of Sarawak. In 1994, no comprehensive plan existed to determine how to apply that knowledge to conserving Sarawak's wildlife. Hence, the Government of Sarawak took the unique step of requesting that a 'Wildlife Master Plan' for the State be prepared. As far as we know, this is the only comprehensive, officially adopted, cross-sectoral master plan for wildlife anywhere in the tropical world.

We describe how the Master Plan was developed and became official government policy, was implemented, and the long-term effects of the Master Plan on wildlife management and conservation in Sarawak. The chapter concludes with an assessment of successes of the Master Plan to date, and the problems that still need to be addressed. Implementation is still continuing, and data on the full impacts of the process on wildlife populations, and on rural peoples, are still being collected.

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State of Sarawak's wildlife populations prior to 1994

Sarawak has amongst the highest number of species of animals for an area of its size anywhere in the world: about 185 species of mammals (Payne *et al.* 1985), 530 species of birds (MacKinnon & Phillipps 1993), 166 species of snakes, 104 of lizards and 113 of amphibians (Dewan Undangan Negeri 1985). Many species are endemic to Borneo, including approximately 19% of the mammals, 6% of the birds, 20% of the snakes and 32% of the lizards.

By 1994, Sarawak had been developing rapidly. From 1980 to 1990, its economy grew by 6.6% per year (Bugo 1995). This was highly beneficial to people in both town and rural areas in terms of improved standards of living and health, and reduced rural poverty (Bugo 1995). But such rapid changes were also having detrimental effects on the wildlife.

The declines and losses of wildlife were due to two main causes. First was habitat loss, especially in the coastal areas where forest had been cleared for the spread of towns, industry, agriculture and aquaculture. Second was hunting, which was responsible for major declines and local extinctions of many species (Bennett *et al.* 2000). Hunting levels had increased dramatically due to an increase in access to formerly remote forests, often as a result of logging or other roads, an increase in the use of shotguns and other modern technologies such as flashlights and four-wheel drive vehicles, and a great increase in the commercial wildlife trade, especially for wild meat. In the early 1980s, it was difficult to buy wild meat in Kuching except in a few specialized restaurants and occasionally at the weekend market, but by the early 1990s, wild meat was widely sold in markets and restaurants throughout the State and at least 1000 tonnes were being traded every year (Wildlife Conservation Society (WCS) & Sarawak Forest Department 1996). All of these factors were greatly exacerbated by the logging industry, which had spread rapidly throughout Sarawak from the late 1970s onwards (see Robinson *et al.* 1999). Logging roads were built into formerly remote forests, allowing outside hunters and hunting technologies (e.g. cartridges, flashlights) to enter, and wildlife to flow rapidly down to towns. Logging company employees hunted for subsistence and sport; one transit camp of 167 workers and their families hunted 1150 animals a year, with a total weight of 29 tonnes (Bennett & Gumal 2001). The combination of all of these factors meant that, by 1992, hunting levels in Sarawak were estimated to be about six times the maximum sustainable level (Bennett 2002), and were leading to wildlife declines across the State, including inside protected areas (Bennett *et al.* 2000).

For example, hornbills, including Sarawak's state bird the rhinoceros hornbill (*Buceros rhinoceros*), had become rare throughout much of the State, due to hunting for feathers and meat (Bennett *et al.* 1997). Banteng (*Bos javanicus*)

became extinct in Sarawak in the first half of the twentieth century (Medway 1977), and the last definite record of a Sumatran rhinoceros (*Dicerorhinus sumatrensis*) in the State had been in 1987. The number of marine turtles nesting on the turtle islands declined by 95% between 1950 and 1987 (Sarawak Museum information). The number of edible nest swiftlets (*Collocalia* spp.) nesting in Niah caves declined by 91% between 1935 and 1993 (Leh *et al.* 1995). In 1964, proboscis monkeys (*Nasalis larvatus*) were abundant and 'not threatened' in Sarawak (Kern 1964), but by 1992, less than a thousand remained in the State (Bennett & Gombek 1993). The range of the orang-utan (*Pongo pygmaeus*) had shrunk greatly: in the late 1800s, it occurred throughout southern Sarawak (Hornaday 1885; Schaller 1961), but by 1990, only one definitely viable population remained. Between 1960 and 1990, flying foxes (*Pteropus vampyrus*) had gone from being a species whose large numbers were a major seasonal spectacle in parts of Sarawak, to being rare or never seen in much of the State (Bennett 1992; Gumal 2001). Oriental darters (*Anhinga melanogaster*) were once common in riverine and lake areas (Smythies 1960), but by 1990 were only found in tiny numbers in one or two sites (Bennett 1992).

The declines in wildlife were viewed seriously by the Sarawak Government because wildlife is considered extremely important to the State. Wildlife is seen as integral to Sarawak's culture; it is woven into traditional belief systems, oral traditions, legends, dance and art. Wildlife is one of the main tourist draws to Sarawak, and is regarded as crucial in maintaining the health of the forests on which the State's economy depends. Wildlife is also a critical source of nutrition for rural people throughout much of the State; in the early 1990s, almost a third of all meals eaten in rural Sarawak contained wild meat, and this rose to two-thirds in remote parts of the interior where it was the main source of protein (Bennett *et al.* 2000). The State Government considered wildlife to have a major aesthetic and spiritual value, and regard it as a moral obligation that future generations be allowed to experience the richness of Sarawak's wild species.

Developing the Wildlife Master Plan (1994–1996)

Recognizing that wildlife was important to the State, but was declining alarmingly, in 1994 the Sarawak Government decided that a comprehensive policy was urgently needed if the unique wildlife was to survive. Hence, the Government requested that a Master Plan for Wildlife be prepared. This would be a policy to integrate wildlife conservation into development planning, and to make detailed recommendations on how to implement that strategy. The Master Plan was to be comprehensive, covering all aspects of wildlife

conservation and management in Sarawak, yet concise and specific so that different sections of the government would know clearly what to do.

Preparation of the Master Plan took 15 months, but it was based on over ten years of wildlife research in the State. The Master Plan was prepared by a core team of four people, two working full time (Melvin T. Gumal, Sarawak Forest Department and Elizabeth L. Bennett, WCS), and two international experts working part time (John G. Robinson and Alan Rabinowitz, WCS). Many others were involved since the process was very interactive, involving discussions with a wide range of people, from rural hunting communities, protected area staff, logging camp managers, government foresters and researchers, to top government officials. Three workshops were held to discuss the draft Master Plan, one with senior government officials and two with Forest Department staff. Based on the comments, the Master Plan was amended. The finalized Master Plan (WCS & Sarawak Forest Department 1996) was submitted to the Sarawak Government in December 1996 and passed by the Cabinet in January 1997, thus making it official policy.

Main themes of the Wildlife Master Plan

The main aim of the Master Plan was to develop a strategy that would result in the conservation of viable populations of all species of wildlife and ensure that the full functions and benefits of wildlife were maintained, while allowing rural people to continue to hunt for their own nutrition. The Master Plan had two main themes: management of hunting, since this was known to be the single largest problem facing wildlife in the State with adverse impacts on wildlife populations as well as rural communities, and conservation of wildlife in different categories of land, the main ones being:

1. Totally protected areas (TPAs). In Sarawak, these comprise national parks, nature reserves and wildlife sanctuaries. Tourism under permit is allowed in the first two, and all three categories allow for some limited use by specified and legally gazetted local communities, but all are fully protected against logging and other habitat disturbance.
2. Permanent forest estate (PFE). In Sarawak, this comprises forest reserves and protected forests, both of which are designated for selective logging under licence; local communities can hunt and use other forest products in protected forests.

TPAs and the PFE collectively comprised most of the remaining relatively intact habitats in the State.

A core recommendation of the Master Plan is to introduce a total legal ban on all commercial sales of wildlife taken from the wild, which would curtail the unsustainable urban trade while allowing rural people to continue to hunt for their own subsistence. Strict control on the issuing of shotgun cartridges was also recommended, again allowing enough for rural subsistence hunters while preventing the massive use for sport and urban trade. The Master Plan recommended strict control on hunting by logging company employees and preventing use of company roads and vehicles for transporting wildlife, preventing hunting by outsiders while not preventing hunting by local communities resident in the area.

Prior to the Master Plan, gazetting new TPAs was a cumbersome, slow legal process, with some proposals to protect areas being in the system for more than 20 years, during which time some wildlife populations and habitats were seriously degraded or lost. The process involved a notification by the Governor; thereafter publication by the Resident, claims recorded by the District Office, decisions made by the District Office, which were then submitted to the Resident who forwarded it to the Clerk for the Supreme Council, for consideration by the Governor in Council. The Master Plan proposed legal changes to streamline this process. These included allowing the Minister to publish the notification in the Gazette and newspapers, with displays at the District Office, and having claims submitted to the Chief Park Warden who then sends it to the Controller for a decision. The changes still allowed for a local consultation process and potential granting of defined use rights to specified local communities.

In addition, the Master Plan had chapters on:

- conservation of endangered species that needed special attention. This included upgrading some species of Protected Animals to the Totally Protected list, imports and exports of wildlife, and dealing with confiscated Protected and Totally Protected animals;
- conservation education to build a constituency for long-term support of wildlife conservation, through focusing on the major target groups such as students, teachers, local communities and senior decision makers;
- capacity building to create a professional wildlife service within the government. At that time, the National Parks and Wildlife Division was a small unit within a much larger Forestry Department and most staff were trained in forestry, not wildlife;
- a final chapter on the economics of wildlife management, showing that if the government increased its expenditure on wildlife management from US$4.8 million to $8.4 million per year, Sarawak would be able to

manage wildlife with a direct value of more than $82.3 million per year, and indirect values exceeding $207.8 million per year.

Implementing the Wildlife Master Plan

Administrative structure

Implementation of the Master Plan started in 1997. The first step was to establish the appropriate administrative structure and management team to oversee the process. Oversight was by a steering committee, chaired by the head of the civil service (the State Secretary), and members comprising the heads of all relevant ministries, government departments and agencies, the Commissioner of Police and Director of Customs. This gave the entire process senior political support and buy-in. On a day-to-day basis, implementation was facilitated by a special unit, the Wildlife Master Plan Implementation Unit, with two full-time staff, based in the Sarawak Forest Department.

Legal structure

Many of the recommendations of the Master Plan could be supported by existing legislation, but others could not. Hence, before full implementation could start, the Master Plan team and Forestry Department staff worked with the Attorney General's Office to prepare two new ordinances (state laws), which were passed by the State Legislative Assembly in May and November 1998, replacing previous laws on wildlife and protected areas.

The new laws were:

1. The Wild Life Protection Ordinance 1998. The main new measures contained herein were: placing a total ban on all commercial sales of all mammals, birds, reptiles and amphibians and their derivatives taken from the wild; increasing the lists of legally protected species; streamlining the legal process to gazette new wildlife sanctuaries; and allowing for local people to be involved more directly, with the government, in the management of those wildlife sanctuaries.
2. The National Parks and Nature Reserves Ordinance 1998. Again, the main new measures contained herein were streamlining the legal process to gazette new national parks and nature reserves, and allowing for local people to be involved more directly, with the government, in their management and deriving a share of the revenues from them.

Together with their supporting rules and regulations, these two laws provided the legal basis to allow the Master Plan to be implemented in full.

Both laws were passed unanimously by the State Legislature, with strong support from many members. This included support from representatives of rural communities, who saw the measures as being good for their constituents, by conserving their natural resources. The debate included the following representative statements from three elected representatives (Dewan Undangan Negeri 1998): 'There is no denial that hunting and fishing are a great threat to our wildlife. The passage of this bill is vital and timely'; 'I support the ban of sale of wild meat. Excessive hunting will deplete the population of wildlife. The people who suffer such a consequence will be the rural people who depend on the wildlife for their protein'; 'We must make a stand, enough is enough. We must protect our wildlife'.

Implementing the wildlife trade ban

When the wildlife trade ban became law, a three-month grace period was granted, to allow traders to dispose of their stocks. During that time, a major awareness programme was conducted, aimed at urban sellers and potential buyers of wildlife. Thousands of brochures describing the trade ban were produced in English, the official Malaysian language (Bahasa Malaysia), Chinese and Iban, and distributed widely in towns. Special attention was given to markets, restaurants, tourist craft shops and Chinese traditional medicine outlets where wildlife was potentially sold. Several press conferences were held, which were widely reported in the press of all main urban languages. Presentations and discussions were held with the main government administrative offices throughout the State. Rural education programmes were conducted in many areas (see below).

After the three-month amnesty, the trade ban was enforced in urban areas throughout the State. By early 1999, the open sale of wild meat and other wildlife disappeared from most towns in Sarawak. Items being sold illegally were seized (Table 4.1), although the effectiveness in enforcement cannot be determined from the seizure data since decreased seizures could be due to decreasing numbers of offenders, or increased laxity in patrolling. This is illustrated by data from 2002 onwards. In that year, the legal enforcement agency changed from the Sarawak Forest Department to the privatized Sarawak Forestry Corporation. At that time, patrolling effort was reduced, during general confusion between agencies on where the management authority lay, and wildlife reappeared in some markets. When the Sarawak Forestry Corporation started re-enforcing the law, the number of seizures increased, and wildlife again largely disappeared from markets, restaurants and shops.

Table 4.1 *Government records of seizures of wild meat and live wild animals, under the Wild Life Protection Ordinance 1998. NA=data not available*

	1999	2000	2001	2002	2003	2004
	8 seizures, weights					
Wild meat (kg)	unknown	NA	1025	198	457	45.3
Live animals	>12	NA	485	7	163	34

Control of hunting technologies

In addition to the trade ban, the other core mechanism under the Master Plan to reduce hunting to sustainable levels was to control hunting technologies. Even though possession of an illegal shotgun is an extremely serious offence under Malaysian law (potentially resulting in the death penalty), it is very difficult to enforce because it is apparently relatively easy to make shotguns with limited technology in rural areas. Shotgun cartridges cannot be made easily, however, and have to be purchased, providing a point of leverage for action. Moreover, a system for controlling cartridge sales through licences issued by each district office was instituted in the early 1960s onwards, due to civil conflict around and after Independence, and was widely understood. Hence, the Master Plan proposed that that system be re-implemented, with each gun owner only allowed to buy ten cartridges per month. Previous research had shown that true rural subsistence hunters used fewer than this, since they hunted pigs with dogs and spears, and also because they were very good shots. Thus, the controls would reduce hunting for sale and sport without reducing the meat available to subsistence hunters.

Legally implementing the control of cartridges was straightforward, since it involved the State Secretary issuing a directive to all district offices. Hence, it was the first official action to be taken in 1997, as soon as the Master Plan became policy. Official records of the imports of cartridges, at first glance, imply that the directive has had no effect (Table 4.2). However, careful interpretation of these data show that accountability and reporting immediately improved. In 1995, official applications for 221743 cartridges were received, whereas official records showed that 2.56 million cartridges were imported into Sarawak. Hence, 91.4% of all sales were unregistered. By 1998, legal compliance was such that applications for cartridges exceeded their imports. There was also an increase in the numbers of district offices reporting applications for cartridges. In 1995, only 11 offices kept records of applications for cartridges, whereas by 2001, this had increased to 18 of the 28 districts in Sarawak.

Table 4.2 *Official numbers of shotgun cartridges applied for, and imported into, Sarawak. Data sources: (i) application for cartridges: District Office records; (ii) imports of cartridges: Sarawak Statistics Department. Cartridge import figures for 1997 and 1998 are estimates as the Statistics Department's records only showed imports in kg, with no breakdown by cartridge size. The average number of cartridges/kg for all the different sizes of cartridges was 21.6 (n=225 cartridges, sizes 2, 4 and buckshot)*

	1995	1996	1997	1998	1999	2000	2001
Application for cartridges by gun owners	221743	264858	347262	553676	642638	393621	489604
Imports of cartridges	2 558 200	960680	2 146 495	540478	1 434 820	497260	NA
Percentage of applications of cartridges to official imports	8.67%	27.57%	16.18%	102.44%	44.79%	79.16%	

Unfortunately, however, these data do not give an exact picture of the numbers of cartridges used by a gun-owner each year. There is unrecorded cross-border trade of cartridges, and the registry of gun owners is out of date. More research is needed to determine the effect of the cartridge controls on actual usage, and hence on the number of animals being hunted. In addition, the gun registry should be updated.

Other legal controls on hunting technologies introduced were a ban on all use of wire snares throughout the State, and use of mist nets without a licence, since both are undiscriminating methods of hunting, and neither are essential to subsistence livelihoods. No information exists on the success in implementing such bans, although shops selling mist nets without a licence have had their nets confiscated on occasion.

To date, no systematic data have yet been collected on the effects of the trade ban, and cartridge controls on wildlife numbers, although wildlife surveys are being planned. Anecdotal information from hunters indicates that the number of bearded pigs (*Sus barbatus*) has increased in some sites, and that the number of smaller mammals around Sedilu and Maludam National Park has increased, due to hunters reserving their limited cartridges for larger animals with more meat.

Control of hunting in logging concessions

The area of PFE and areas under logging licence in Sarawak almost entirely overlap. The PFE is potentially extremely important for wildlife conservation since, in 1996, it included 51% of Sarawak's forest and 36% of the

State's land area. Yet hunting levels by logging company employees and outsiders using logging roads were extremely high (Bennett & Gumal 2001), so a core recommendation of the Master Plan was to reduce or eliminate any additional hunting caused by the presence of a logging company. In 1999, the Director of Forests issued a directive to all logging company operators, specifying that no logging company employees can hunt while in the employ of the company, that logging company vehicles cannot be used for hunting or to transport wildlife, that feeder roads must be closed once an area of forest has been logged, and that the legal ban on wildlife sales must be respected in the concession.

Compliance has been poor, with little political will for enforcement of the new regulations, as wildlife was not considered a priority in logging concessions. Since 2001, a project between one logging company (Samling Corporation) and WCS to implement the regulations, and monitor their success, has been conducted in one concession in Ulu Baram. Among some of the visible changes in the concession are: the logging company employees are now aware of the legislation; wild meat is no longer sold in the staff canteen; and an independent auditor has been nominated to conduct spot checks on forestry and wildlife offences through a voluntary national timber certification scheme. In January 2005, WCS was invited by the government to extend this programme to another five concessions.

Improving the system of totally protected areas

When the Master Plan was written, Sarawak's TPAs only covered about 2.3% of the State's land area, and many of the TPAs were also too small to be viable in the long term, if they were to become isolated (Bennett & Zarina 1999). This was addressed by the new laws streamlining the gazettement process, and by the creation of a new position of Constitution Officer whose role was to facilitate that process. As a result, the numbers of TPAs increased dramatically, from 13 in 1996 to 27 by 2005 (Fig. 4.1a). Many of the new TPAs were small, especially nature reserves designed to protect small sites of special concern (e.g. caves), so the area of TPAs increased, but not so dramatically: from 290 175 ha or 2.3% of the State's land area in 1996, to 443 618 ha or 3.6% by 2005 (Fig. 4.1b). Proposals to protect other areas, some of them relatively large, are still being processed. If successful, they should result in inclusion of 10% of the State's land in TPAs, although that is still very far from being realized.

In addition, technical assistance from Danish Cooperation for Environment and Development (DANCED) was obtained, aimed at improving management of TPAs on the ground. This established the first community committees to assist

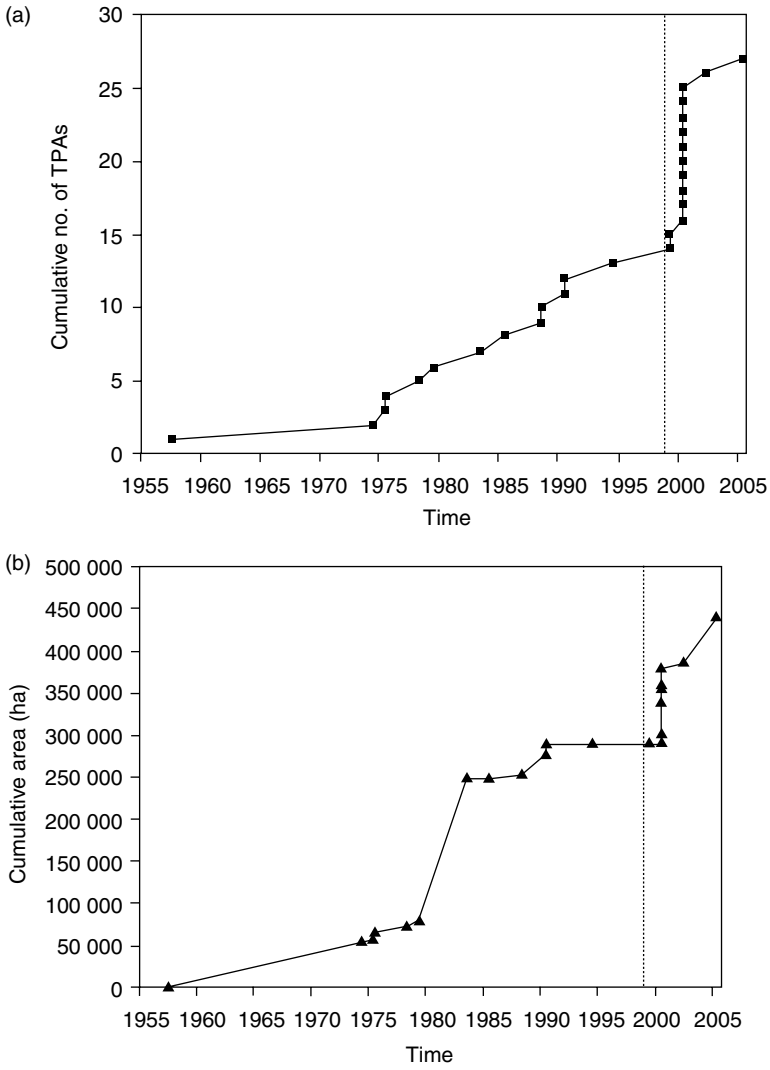

Figure 4.1. Gazettement of totally protected areas (TPAs), 1954 to present. (a) Cumulative total number of TPAs and (b) Cumulative total area of TPAs.

in management, although their implementation deviated somewhat from that envisioned in the Master Plan since the committees were chaired by the central administration rather than being localized. The project succeeded in some specifics (e.g. improved management of edible nest swiftlets in one national park), and raised the political profile of some parks, but did not significantly enhance TPA management more broadly.

One outstanding problem not yet resolved is a major shortage of trained staff in TPAs. At the time of writing the Master Plan, the ten national parks had a

total staff (excluding labourers) of 17 people, or 1.7 per park. The Master Plan proposed increasing that number to an average of ten staff per park (distributed according to need), as well as a considerable increase in labourers. This has not been implemented. Indeed, with the creation of more TPAs, the current staff has been stretched even more thinly than before: between 1996 and 2001, the number of TPAs increased by 85%, but the total number of staff only increased by 3.8%.

Capacity building

A professional government service trained in all aspects of wildlife and protected-area management was seen as a necessity for effective implementation of the Master Plan in the long term. This required long-term commitment by the government, who supported such efforts strongly as implementation began.

Key senior officers were encouraged to take relevant degree courses, including higher degrees; by 2002, one staff member had completed his Ph.D. on wildlife ecology, four senior staff had almost completed their Master's degrees, and four junior staff had completed their first degrees in forestry and wildlife ecology.

The government sponsored Lincoln University, New Zealand, to come to Sarawak to devise and conduct a custom-made, certificate-level course to train the majority of TPA ranger-level staff in ecology, wildlife management, park management and ecotourism management. The course was taught in five modules, each run three times for different staff, to allow many to attend while still leaving staff in their jobs. A total of 78 officers attended, with a wide initial recruitment to allow as many people as possible to sample the course. Fifty-eight people graduated with certificates, and a further nine completed all modules but did not complete their dissertations. One indication of the improved performance of ranger-level staff as a result of the Lincoln course was that in 1997, no TPA staff were confident to present any papers at the National Parks and Wildlife Division's Annual Workshop, but by 2001, 27 TPA staff did so, and published the papers in the proceedings.

In addition to the formal, external training, in-house courses for TPA staff were held on specific skills, e.g. enforcement, species identification, wildlife surveys and monitoring.

Education

A core recommendation of the Master Plan was to increase the constituency supporting conservation throughout Sarawak. In addition to publicity campaigns surrounding the new laws (see above), major conservation education programmes have been conducted by the Forestry Department's

Conservation Education Unit. In the first five years of Master Plan implementation, a total of 18323 pupils participated in school education programmes. Rural education programmes were conducted in 182 villages in and around TPAs and other critical forest areas. These often took the form of drama, to illustrate graphically the decline in wild meat for rural communities if sold to town traders.

Discussion

The speed at which all of the procedural and legal processes to implement the Master Plan were put into place exceeded all expectations. The new laws and regulations were written and passed extremely rapidly, giving Sarawak arguably the strongest legal system in the humid tropics for supporting wildlife management. Factors contributing to this success were extremely strong political support, the solid grounding of the Master Plan in long-term research, and its authors between them having many years of experience in Sarawak and global wildlife-management expertise. That and the very collaborative process of writing meant that the Master Plan was based on biological, cultural and political reality. A further major factor for success was a full-time unit dedicated specifically to oversee implementation. In addition, the inclusion in the Master Plan of a timetable for actions by specified government agencies provided a means for the steering committee to assess progress and ascribe accountability.

By 2002, the new laws and regulations were in place and were being implemented in towns across the State, and many staff had been trained. The most important next steps were to continue to implement strategies on the ground throughout the State. Since this did not involve further high-level policy decisions and actions, the Implementation Unit was disbanded. Around the same time, the State Secretary who was behind so much of the Master Plan retired, and the authority for managing Sarawak's wildlife moved from the government's Forestry Department to the private Sarawak Forestry Corporation. Although political support for the Master Plan remained strong with a few key senior individuals, broader momentum within the management authorities declined. The immediate effect was an overall decrease in education and enforcement activities, with a resulting temporary increase in market trade, and a further decline in staff allocated to TPAs. A clear lesson is that long-term continuity in political support and management authority is essential for such initiatives if they are to remain strong. Once effective on-the-ground management wanes, experience from Sarawak and elsewhere in the world (e.g. Leader-Williams & Milner-Gulland 1993; Struhsaker *et al.* 2005) shows that encroachment and hunting rapidly increase.

Nonetheless, the new laws and regulations remain in place, and sporadic enforcement is occurring (e.g. Wong 2005). The wildlife management project in Ulu Baram is proceeding well, and the fact that the Sarawak Forestry Corporation has asked for WCS's assistance in extending this to five more concessions indicates that this will gradually be replicated throughout the State. Interest in doing so is also slowly increasing amongst timber companies, as their interest in timber certification rises. The process to gazette additional TPAs continues, and further ones are expected to be created soon, although the target of 10% of the State's land to be protected still seems somewhat distant.

Most importantly, support for conservation amongst rural communities remains strong. In Sarawak, rural populations, especially in the highlands, have long been active supporters of conserving forests and their wildlife, epitomized in the late 1980s and thereafter by protests by local communities against logging companies entering the forests. The national park gazetted most recently, Pulong Tau, was originally requested by the local Kelabit community, and the park's name means 'Our Forest' in Kelabit. Maintaining the balance between development and conservation is extremely difficult, with differences between and even within communities in where that balance lies. But as a broad generalization, rural communities generally understand and support initiatives that conserve forests and their resources. As the implementation of the Master Plan began, some initial concern about the measures to control hunting arose, but support rapidly increased as soon as people realized that nothing prevented hunting by rural communities for subsistence, and that instead the measures aimed to increase the amount of wild meat available to rural hunters. Indeed, some rural dwellers requested even further strengthening of hunting control measures. After the first two years of implementation, a paramount community leader over a large area of the interior wrote to the government to request that the number of shotgun cartridges allowed be reduced from ten to five per gun owner per month, to reduce the excessive hunting in his area by town hunters.

To consolidate the entire process, and ensure that the Master Plan's aims are met, several immediate actions are needed. The Sarawak Forestry Corporation's education and enforcement programmes need to be expanded very greatly to be a consistent presence, especially in TPAs and logging concessions. The role of the community-based TPA committees should be strengthened considerably, to ensure that local communities are truly involved in management of, and deriving visitor revenues from, TPAs. The numbers of TPA staff should be increased very greatly, with new recruits being trained in biological, social and tourism management, either by repeating the Lincoln University programme, or through some equivalent training. The effect of all of the changes on wildlife populations should be monitored by

analyzing current survey data and re-surveying sites that had been studied prior to the Master Plan. The impacts of the Master Plan on the economic and nutritional status of rural communities should also be assessed. A mechanism is then needed to feed the results into future management, in a way that strengthens implementation of the Master Plan, and ensures that its vision of balancing wildlife conservation with development, and with the needs of rural peoples, is attained.

Summary

In 1997, the Sarawak Government adopted 'A Master Plan for Wildlife in Sarawak' as official government policy and created a management unit to oversee its implementation. The Master Plan is a comprehensive policy document prescribing how to conserve wildlife across Sarawak. It was prepared in consultation with many parties, from rural communities to senior government officials. Its two core themes are control of unsustainable hunting, and conserving wildlife in different categories of land. Between 1997 and 2002, implementation included: legislative changes incorporating a total legal ban on sales of wildlife taken from the wild, simplifying the process for gazetting new protected areas and provisions for increased participation in protected area management by local communities; controlling modern hunting technologies; and regulations to control hunting in logging concessions. Implementation involved state-wide conservation education and enforcement programmes, formal training for government staff, the creation of important new protected areas, and reductions in sales of shotgun cartridges. The result has been an increase in protected areas, and indications that the wildlife trade is declining. Factors contributing to successful implementation of the Master Plan include: it was grounded in long-term field research and in-depth local knowledge; it was requested, and supported by, senior-most government decision-makers; it was user-friendly and specific, including having timetables for action by specific agencies; and the rural population understood the need for, and supported, the conservation measures proposed. Next steps needed are increased staff capacity, incorporating rural communities more effectively into protected area management, full implementation in logging concessions, and monitoring the effects of the Master Plan on wildlife populations and on rural communities.

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5

Indonesia's protected areas need more protection: suggestions from island examples

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Introduction

Intact, biodiverse ecosystems provide invaluable life-support services, raw natural resources, and cultural necessities ranging from recreational to spiritual. Moreover, they are literally economically priceless (Costanza *et al.* 1997). It is widely appreciated that 'biodiversity is good' and that ultimately, human well-being and persistence will depend on our ability to preserve it for future generations.

Biodiverse ecosystems, however, are not evenly distributed on our planet – they are patchy and concentrated in tropical regions (Myers *et al.* 2000). Likewise, costs and benefits of conserving biodiversity are not evenly distributed (Balmford *et al.* 2003). Our ability to conserve biological diversity is constrained by global trends of exploitation, pollution and habitat loss – all increasing because of human-population growth. Unfortunately, areas of accelerating human population growth overlap many areas of highest biodiversity where resources to protect this diversity are fewest (Cincotta *et al.* 2000) and land-conversion pressures greatest. As human populations continue to expand, we are faced with even more pressing needs to conserve and protect diverse ecosystems.

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Protected areas: theory meets reality

Protected areas are, by definition, designed to protect biological diversity from threats to its continued existence. They are the cornerstone of most biodiversity efforts because species need habitats and they might be the best way to ensure the long-term conservation of biodiversity (du Toit *et al.* 2004). Unfortunately, many protected areas are only 'paper parks' that are not only highly degraded, but also the target of continuing exploitation (Curran *et al.* 2004). Without enforcement of environmental regulations and a goal-oriented strategy for recovery, there is little chance that protected areas will realize their intended purpose.

A recent review confirmed that forest cover within protected areas is being lost in all major tropical forest areas and that protected areas are becoming increasingly isolated from each other because of human disturbance and forest clearing (DeFries *et al.* 2005). This is especially true in the tropics because immediate needs of expanding local populations often supersede long-term plans to sustainably use natural resources (Balmford *et al.* 2003). Indeed, conservation of biodiversity can, in many cases, conflict with efforts to alleviate poverty (Adams *et al.* 2004). But because species extinction is an absorbing boundary (i.e. there is no short-term recovery), overexploitation passes accumulating ecosystem failures and worsening situations on to future generations. It is therefore defensible to protect biodiversity from unsustainable exploitation, even when such protection necessitates contemporary sacrifice in order to conserve intact ecosystems for the future. With little data and scant methods to measure the extent and effectiveness of protected areas (Chape *et al.* 2005), we still need to prioritize data gathering, ground-truthing and reliability. Ultimately, future generations will judge how effective we have been in ensuring their livelihoods, health and quality of life through the conservation of biodiversity, both inside and outside of protected areas.

Indonesia's island conservation context

Comprising over 17000 islands, Indonesia is a megadiverse country, containing a fantastic array of endemic organisms. Indeed, nearly the entire country falls into the Conservation International biodiversity hotspots of Sundaland and Wallacea (see Table 5.1). The only part of Indonesia that does not fall into a hotspot is the extremely biodiverse Papua Province (the western half of New Guinea), where threat levels are not considered high enough to warrant 'hotspot' status. The archipelago's complex geological history both facilitated species dispersal over Pleistocene land bridges and promoted endemism via a

Table 5.1 *Characteristics of Indonesian Hotspot Areas (in IUCN categories) in 1000ha from 2004–2005 data. (Data from Conservation International, available at http://www.conservation.org and the FAO, available at http://www.fao.org/ forestry/foris/webview/forestry2/)*

	Wallacea	Sundaland	Indonesia
Original Area	33849	150106	191944
Remaining Primary Forest Area	5077	10057	48702
National Parks, Reserves, Forests, Natural Monuments, etc. (categories I–V)	1970	7741	8607
Unclassified Areas (category VI)	469	10 232	17385
Total Protected Area	2439	17972	23893
Percentage of Area Protected	13.9	8.4	12.4
Percentage of Protected Area in category VI	19.2	56.9	72.8

[a] Consisting of the islands of Sulawesi, the Moluccas, the lesser Sundas and the islands of Nusa Tenggara.

[b] Consisting of the islands of Sumatra, Java, Bali, Borneo and the mainland Malay Peninsula (portions of Thailand, Singapore, Brunei and Malaysia).

[c] No consistent level of protection, no set regulations on allowed resource harvesting activities, etc.

network of deep oceanic trenches and recurrent marine barriers. Indonesia is home not only to a diverse biota, but also to a large, densely packed and rapidly growing human population. Indonesia is the fourth most populous country in the world with over 240 million people as of 2004.

While the Indonesian people have moderate levels of freedom, civil liberties and political rights, the country is characterized by very high levels of corruption (World Resources Institute 2006; http://earthtrends.wri.org; King 2000) and some endemic conservation problems. One such problem is Indonesia's record of deforestation inside protected areas, estimated at more than 18% in 2003 (Kurniawan 2003 in the *Jakarta Post*). While this figure seems extremely high, it is almost certainly an underestimate (Brown 2006), given credence by numerous other such reports that regularly are described in the Indonesian press (e.g. Gunawan 2002 in the *Jakarta Post*). The Indonesian government's attempt to alleviate extreme population densities on the island of Java by moving people to less populated islands (the Transmigration Program) has created more opportunities for deforestation and a series of displaced rural populations throughout the archipelago. Moreover, larger societal problems outside the scope of this report that hinder conservation efforts include low investment in public

Table 5.2 *Extent of Protected Areas (in IUCN categories) in 1000 ha from 2004–2005 data. (Data from Whitten* et al. *1987 and World Resources Institute 2006. EarthTrends: The Environmental Information Portal. Available at http://earthtrends.wri.org)*

Protected Area	Sulawesi	Indonesia	World
National Parks, Nature Reserves, etc. (in category I and II)	1407	5668	438448
Protected Forests, Natural Monuments, etc. (in category III, IV and V)	383	2939	326503
Unclassified Areas (in category VI)	3867	17385	692723
Total Terrestrial Protected Area	5657	23893	1457674
Total Marine Protected Area	0	13559	417970
Number of Areas >100000 ha	2	38	2091

[a] Most protection, fewer allowed resource-harvesting activities, etc.

[b] Less protection, more allowed resource-harvesting activities, etc.

[c] No consistent level of protection, no set regulations on allowed resource-harvesting activities, etc.

education, limited access to information, and international and local governments' emphasis on development projects, which often compete or even conflict with conservation values.

Another threat to conservation in Indonesia is the preponderance of 'unclassified' protected areas (IUCN (The World Conservation Union) category VI), that have no real biodiversity protection and yet constitute 64% of the total area reported as protected in Indonesia (Table 5.2, World Resources Institute 2006; also see Table 5.1). While this unquestionably inflates the area that appears to be protected in Indonesia, the use of IUCN category VI protected areas is a conservation wildcard that could have important implications for biodiversity if those areas are indeed somewhat intact biomes. On the other hand, if these areas really do not have any value to conservation, then including them in statistics of protected areas is misleading and, ultimately, a damaging strategy.

During our ongoing efforts (Brown & Guttman 2002; Brown & Iskandar 2000; Brown *et al.* 2000; Evans *et al.* 1999, 2003a, 2003b; McGuire & Kiew 2001; McGuire 2003; Supriatna & Hedberg 1998; Iskandar & Erdelen 2006; Meijaard *et al.* 2005; Iskandar 2004; Gillespie *et al.* 2004) to better understand this complex of biological hotspots (Myers *et al.* 2000), we have worked in many protected and non-protected sites in Indonesia, particularly on the island of Sulawesi (and to lesser degrees in Java, Sumatra, Kalimantan, Bali, the Lesser Sundas and Papua). Here we describe our observations on the status of protected areas, biodiversity conservation and natural-resource management that we witnessed during recent expeditions to Indonesia, with particular emphasis on, and data from,

Figure 5.1. Unsustainable harvest of endemic mammal species. A group of local hunters poses with Indonesian students in Gunung Ambang protected area. A Sulawesi cuscus (*Phalanger* sp.) on the left, a Yaki macaque (*Macaca nigra*) in the middle, and many forest rats (*Rattus* spp. and *Taeromys* sp.) on the far right are shown (on stakes).

the island of Sulawesi. We feel strongly that current levels of resource management, biodiversity conservation and effective environmental policy actuation are inadequate to protect biodiversity in Indonesia. If not addressed soon, this situation will result in continued and substantial deforestation and extinction of Indonesia's biodiversity, even in protected areas (Kinnaird & O'Brien 2000; Sodhi *et al.* 2004). We outline problems and provide possibilities and suggestions for future conservation of Indonesia's tremendous and valuable biological diversity.

The constant (chainsaw) buzz of development

Deforestation of Indonesia's remaining few forested areas is a tragedy that continues at astonishingly high rates (Holmes 2000) despite reports to the contrary (e.g. Sunderlin & Resosudarmo 1996). Although strictly prohibited, until recently there has been little done to stop logging and other illegal practices in protected areas (Fig. 5.1 and Tables 5.3 and 5.4), and only in the past five years have there been focused efforts to eradicate illegal logging throughout most of

Table 5.3 *Protected areas visited from 2001–2005. For each protected area, we list activities witnessed. (NP = National Park; NR = Nature Reserve; PF = Protected Forest)*

Protected Area	Human settlement	Hunting/ trapping	Logging	Gardening	Rattan harvest	Cattle grazing	Other livestock	Land clearing/ burning
Tangkoko NR/NP		×	×	×	×	×	×	×
Gunung Ambang NR	×	×	×	×				×
Bogani Nani Wartabone		×	×	×	×	×	×	×
Tanjuang Api NR			×					
Morowali NR	×	×	×	×	×	×	×	
Lumpobatang NR			×					
Lore Lindu NP	×	×	×	×	×		×	×
Gunung Soputan PF		×	×	×	×			×
Gunung Klabat PF		×	×					×
Randangan Panua NR			×					
Tinombala NR			×					

Table 5.4 *Officially permitted (+) and prohibited (–) activities for Sulawesi's protected areas. Actual activities we witnessed from 2001–2005 are indicated as (*). Adapted from Whitten* et al. *(1987)*

Activity	National Parks	Nature Reserves	Protected Forests
Gardening	– (*)	– (*)	+ (*)
Logging	– (*)	– (*)	– (*)
Hunting	– (*)	– (*)	+ (*)
Fishing	+ (*)	– (*)	+
Rattan harvesting	– (*)	– (*)	+
Human settlement	– (*)	– (*)	– (*)
Firewood harvesting	– (*)	– (*)	+
Mineral exploration	+ (*)	– (*)	+

Indonesia. We have witnessed illegal forest clearing and lumber extraction in every protected area in Indonesia that we have visited (including National Parks, Nature Reserves and Protected Forests; see Table 5.4).

Threats to protected areas range from subsistence use (e.g. gardening, squatting, slash-and-burn agriculture), overexploitation of specific resources (e.g. rattan harvesting, mammal hunting and trapping), small-scale and industrial mining and logging, to large-scale clear-cutting, all of which are common threats to tropical forest areas around the globe (van Schaik *et al.* 1997). Like most of Indonesia, Sulawesi is heavily populated with human densities of 25–130/km^2 and population growth rates between 1.6–3.7% (from 1990 estimates, UNFPA (United Nations Population Fund) 2000). These high human-population indices reflect trends that can only increase environmental pressures accrued in tropical developing countries and are primarily responsible for the modern biodiversity crisis (UNFPA 2000). Without a doubt, there is very little 'pristine' habitat left on the island of Sulawesi, and like the rest of Indonesia, Sulawesi is in serious environmental trouble with many ecological disasters looming on the horizon (Sodhi *et al.* 2004). Although the designation of protected areas can be an effective tool for the conservation of biodiversity (Bruner *et al.* 2001), we feel there is still a large difference between what has been reported and the reality of many protected areas, and use Sulawesi as an example.

Success vs. failure

While there are examples of conservation successes within the protected area network (e.g. Lore Lindu National Park and Bogani Nani Wartabone), several protected areas across Indonesia are failing for a variety of

reasons. Often the establishment or persistence of a protected area conflicts directly with the livelihoods of local people (Figs. 5.1 and 5.2; Tables 5.3 and 5.4). People living near or within protected areas must sacrifice some natural resource in order for the protected area to really protect something. Most if not all protected areas would benefit if local people restricted their natural resource use or curtailed their harvesting from protected areas. This sacrifice should be rewarded in tangible ways, so that local people feel that they are directly benefiting from being in close proximity to a protected area. Too often, the benefits of protected areas (potable water, clean air, fertile soils, regulation of temperatures and rainfall) are not fully appreciated because they have little or no local value until they disappear. One potential strategy to help local people value these benefits is an educational programme that focuses on the benefits and reasons for having protected areas. Providing incentives, financial or otherwise, is also a viable method for bringing more value to ecosystem processes that are hard to quantify.

Another reason for failure is the chronic high level of corruption, institutional instability and a dearth of resources at government agencies that are responsible for protected-area management. With poorly paid personnel, lack of funding and expertise for research, and politically enforced policy changes that have no scientific merits, protected areas fight an uphill battle just to remain viable on paper, let alone to actually protect biodiversity. And while the struggle to conserve the biological integrity of a protected area is a continual process, the opponents of biodiversity conservation need only to win once. Mining, logging, hunting and other exploitation interests irreversibly alter the biological integrity of a protected area, and once they have profited from an area, conservation of remaining biodiversity is compromised.

Lastly, management techniques and funding for protected areas are often administered remotely, while the real needs of management and funds occur at a local scale. A series of decentralized objectives can be implemented at the local level to make conservation strategies viable in most protected areas.

Community-based conservation?

Integration of local communities into protected-area conservation plans has been identified as a potential strategy for biodiversity conservation (Baland & Platteau 1996; Berkes *et al.* 1989), but we are sceptical of the results so far. In theory, communities living in or near protected areas, and whose livelihoods depend on the natural resources now confined to these protected areas, would be best served if they became local stewards for conservation of the areas (Fig. 5.2). Unfortunately, there is a large discrepancy between community-based

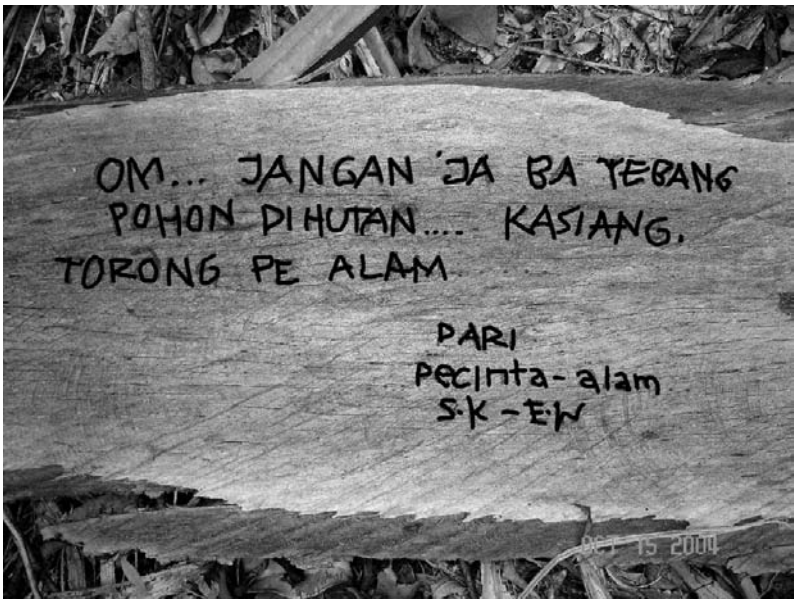

Figure 5.2. Warning sign left by hikers in Gudung Ambang protected area at site of illegal logging. Translation: 'Sir…Please do not cut down the trees in the forest… have pity on nature' written by a student outdoor group in Kotamobagu.

conservation theory and practice, sometimes brought out by biologists' ignorance of the social and cultural contexts of the protected area (West & Brockington 2006).

The idea of community-based conservation is particularly appealing because it addresses both biodiversity conservation and social needs for rural development. Because centralized management of protected areas in locations far away from protected areas may not result in tangible conservation, there has been an appreciation for more locally based programmes (Heinen 1996). Many centralized provincial or national management agencies are poorly informed, not physically present to monitor and enforce regulations, and usually have conflicting interests of resource exploitation not compatible with conservation. However, this locally based approach can only be fruitful in the context of strong national and local institutions and a solid government programme for supporting community-based conservation (Ross & Wall 1999b). Unfortunately, these requirements are seldom met in tropical developing countries where they are most needed.

Although integrating conservation and development goals sounds like a good idea, it has rarely produced effective results (MacKinnen & Wardojo 2001). Most Indonesian projects of this type do not appear to be working (Wells *et al.* 1999)

and there are specific examples from Sulawesi where these projects have failed (Ross & Wall 1999a). Protected areas still need national as well as regional and local management and will require active defence at all levels in order to effectively conserve biological diversity (see Murphy 1994; Kramer *et al.* 1997). Any long-term plans to conserve biodiversity must incorporate lessons from community-based efforts, transparent national conservation plans and international help.

In order for conservation to be effective, at least some decoupling of conservation and development goals may be necessary in some areas. For example, protected areas need to be free from excessive anthropogenic disturbances (e.g. logging, gardening, etc.) to effectively conserve biodiversity. Even though contemporary conservation will have to be in the context of sacrifice and compromise, conserving biodiversity now avoids simply passing responsibility of compounding problems to future generations (Western & Wright 1994). Protected-area buffer zones, corridors that link protected areas and educational programmes offer many possible ways to balance the constraints of conservation on development (see below).

Where there is a necessity of making protected areas work in a context of human use and local communities, we can have positive conservation outcomes by utilizing lessons learned from some recent successful projects that hinge upon just a few basic and simple premises, largely owing to innovative partnerships and collaborations.

Lessons learned from conservation projects: new directions

Although recent success stories are difficult to find, they do exist (Purnomo 2005) and can provide lessons regarding which strategies can work in Indonesia and those that do not seem to work (see Chapter 6). Among these, we outline three of what we feel are the most important core areas and reasons for recent success: decentralization, innovative collaboration and public education.

Many conservation practitioners, NGOs and local Indonesian governmental agencies are maximizing the current decentralization process by promoting more responsible stewardship at local levels around Indonesia. In fact, this strategy seems to be extremely effective in creating new support systems from NGOs with technical, institutional and logistical resources that were previously lacking in most local conservation scenarios. By bringing together the different skill sets from local governmental agencies, NGOs and conservation workers, Indonesia can capitalize on new and innovative collaborative relationships to conserve protected areas.

In a recent World Bank document on the forestry sector of Indonesia, Brown (2006) outlines two of the flagship success stories of these new multi-stakeholder relationships. Bunaken National Park (BNP) has developed an innovative collaboration with the Department of Forestry, local communities, the scuba diving ecotourism industry, and both provincial and district governments. This broad-based management committee with such a diversity of representatives from all stakeholder groups, ensures a much more reasonable park administration, a source of sustainable funding based on the continuation of biodiversity conservation (ecotourism entrance fees), and the support from local communities. The BNP Management Advisory Board collects and distributes ecotourism fees, providing sustainable funding for park management and protection and is controlled by a democratically elected group of representatives from the 30000 people living in and near the park.

Another of the most notable success stories is the Berau District Marine Protected Area in East Kalimantan. A consortium of international and local NGOs, the Berau District government and a few conservation donors developed a new 1.2 million-ha Marine Protected Area based on biological, technical and legal analyses. This is an excellent example of many different stakeholders from a variety of disciplines coming together in order to create a Marine Protected Area based around the reality of the existing legal system, the local communities' goals (represented mostly by local NGOs), biological data and biodiversity conservation initiatives. In addition, it is the first district-level Marine Protected Area in Indonesia and has a professional management team funded through the local government.

What these two success stories share is a sustainable source of funding that is reliant upon the protection of biological diversity. In other words, the financial stability of these projects is dependent upon intact biodiversity, ensuring a sustainable equity base for conservation management operations, salaries, incentives for local participation and overhead costs.

Decentralization can help conservation and protected areas

In an optimistic review of the most recent achievements of conservation work in Indonesia, Purnomo (2005) shows how various Indonesian governmental agencies have worked to protect new areas, strengthened conservation law enforcement, revitalized previously planned (but neglected) protected area projects, started restoration and reforestation initiatives, and developed new partnerships to develop and meet conservation goals. There is general agreement that benefits straddling socioeconomic boundaries, improving local livelihoods and achieving results that are meaningful to local

stakeholders have tremendously better potential for success than other approaches that do not include such benefits for local stakeholders (Brown 2006). These innovative partnerships, however, need to be removed from the same category as 'community-based' projects or those that appear to join conservation and development goals. This is because new partnerships (besides just local people and NGO workers) are being forged, bringing together stakeholders with varied backgrounds, goals, experiences and expectations.

Perhaps one of the most powerful ways that the Indonesian government has helped conservation efforts is through the recognition and promotion of partnerships involving many stakeholders participating in the management of protected areas. Testimony to the success of these management councils are Bunaken National Park and Komodo National Park, with less well-known examples on virtually every other large island (Bali, Java, Borneo, Sulawesi and New Guinea) in the archipelago (Purnomo 2005; but see Chapters 12 and 14).

Partnerships between public (governmental) and private (usually NGO) groups have also been responsible for all of the major recent success stories in protected-area conservation and have shown how new innovative relationships can be expanded and replicated. For example, resolving protected-area boundary conflicts have had huge impacts in East Nusa Tenggara (Indonesia), demonstrating how involving local communities and empowering them with real responsibilities (in the context of conservation goals and community resource use) can positively contribute to the management of community-owned land inside protected areas.

Other examples of how effective partnerships with local communities can benefit protected-area management and the conservation of biodiversity are found in the legitimization and adoption of traditional practices by communities adjacent to or in protected areas (Little 1994). For example, setting aside fewer mature and more young trees in local-community forest management on Sumba island, Nusa Tenggara has been fruitful for conservation, while customary fishing practices limiting catches in protected areas of the Padaido Islands, West Papua are also very effective for sustainable use of natural resources and the conservation of biodiversity inside and outside of protected areas. Because these practices stem from traditional peoples' existing conservation ethics, adopting them into a protected-area management plan can help cement support from people living in and around the protected area.

These examples from most islands of Indonesia provide an optimistic outlook about local cooperative-management strategies that, at least in some cases, can reverse the general degradation of protected areas and achieve real conservation goals by enhancing management effectiveness and local attitudes towards protected areas.

Environmental education is important

Although public education focused on the environment is not a new idea, it has thus far only had a small-scale and short-term precedence in Indonesia. A long-term plan prioritizing large-scale efforts can be achieved by pulling together different partners. In a focus more on public awareness, nation-wide programmes have already been shown to be effective. Attempts by the Global Environmental Facility (GEF) and the United States Agency for International Development (USAID) have improved protected-area conservation efforts by promoting pride in endemic Indonesian biodiversity and concern over its future. Aimed at training journalists to run public-awareness projects, the most successful endeavours have focused on advertisements and short documentaries, and have targeted very specific audiences like teachers, policy makers and religious leaders.

Including religious groups in conservation is also a new initiative that has shown tremendous promise in Indonesia. There are many potential applications of conservation ideas and protected-area management that are prevalent in most religions. Projects that glean pro-conservation excerpts from religious texts, tree-planting exercises by mosques, churches and temples, and the possibility of promoting conservation awareness through religious teachings, meetings, schools and services are all ideas that can be utilized more.

Direct involvement with governmental public-school systems has also been a product of relatively recent decentralization efforts and many successful environmental education programmes are in place in schools all over Indonesia. A key to success in this area seems to be including a variety of partners with different skills, funding opportunities or resources. For example, including local governmental and educational agencies, textbook publishers, school supply stores, parents, and both conservation and development NGOs can ensure a well-rounded and positive environmental education programme for most schools. One of the drawbacks, however, seems to be the difficulty in finding and maintaining funding, since some of the environmental educational programmes require more funding than is currently being allocated by the Indonesian government.

Market strategies like mass-media advertising are also extremely effective at raising public awareness and at least disseminating a small set of important facts to many people for a relatively small investment per person. Although mass-media advertising campaigns can never replace a real core curriculum for students, they can target other important audiences, and affect policy makers, and other community leaders by raising issues that would otherwise not be widely recognized.

Finding conservation funding

As mentioned above, a recurrent theme in most environmental educational programmes is lack of funding, a theme that is also common for most conservation programmes outside of education. The Indonesian government does not currently have sufficient funding to manage existing protected areas. Educational programmes, enforcement of conservation laws and other projects are equally under-funded and in need of a sound business strategy.

We would encourage the use of funding sources that are reliant upon a minimum baseline of biodiversity conservation in order to be sustained. Understanding that this both promotes (primary generation of conservation monies) and potentially weakens (if the biodiversity is gone, so is the funding) biodiversity protection, it is a double-edged sword that must be carefully wielded in order to reap the potential benefits for protected areas (Kiss 2004). New taxes or fees on natural resource extraction are one easy way to generate money, but need to be carefully planned and executed so conservation efforts themselves are not overly taxed. Entrance fees and tourism taxes are another potential source of conservation dollars, but cannot be relied upon for every situation, especially in absolute protected areas with restricted access. Other possibilities can be specifically designed for each protected area and can include biodiversity research as a business, handicraft items made by local communities within protected areas, and other spin-off businesses in local communities, such as bird-watching tours, that rely on protected-area biodiversity.

Increasing incentives for biodiversity conservation

If Indonesia's natural resources are to be conserved, Indonesia and the international community can strengthen the effectiveness of protected areas in biodiversity conservation in the tropics by prioritizing protected-area management. Because contemporary resources are inadequate, priorities must be carefully chosen to balance the scientific integrity of the conservation objectives with the basic limits and logistics of funds and personnel. A feasible series of reviews of the national protected areas would be a solid beginning and be an immediate way to legitimize grass-roots efforts and attract international collaboration and funding.

Another immediate strategy would be to formulate incentives for local people to become more involved in protected-area management. Paying a cohort of local people from each of the communities around the protected areas to act as rangers is one simple example of how such strategies can be implemented. Other incentives may be to give local stakeholders access to the natural

resources they want (at a sustainable level) but make them responsible for the resources' long-term viability. This would necessitate an educational programme focused on the particular natural-resource needs (e.g. water, nutrients, sunlight, pollination for a rattan plant) and also enforced prevention of other groups harvesting the same resource. By making a local group of stakeholders effective stewards and 'owners' of the resource, they will value the resource more, realize that they have a corner on the market, and commit to conserving the resource for the long term.

To change stakeholders' attitudes towards a protected area, increased economic benefits directly from protected areas into local communities is a good strategy. To be effective, however, benefits should to be tied directly to the preservation of biodiversity, so that people have incentive to promote activities that protect and conserve biodiversity while curtailing or completely stopping activities that exploit or decrease biodiversity. Resource management of adjacent land can also be integrated with the objectives of the protected area through establishing buffer zones, sustainable harvesting and habitat corridors that link protected areas.

To ensure ongoing protection and effective biodiversity conservation of protected areas, full integration with the local socioeconomic context is imperative. The extent of a protected area's long-term viability hinges completely on its integration with the local people; the conservation objectives of the protected area need to be complementary and positive in regard to the local peoples' livelihoods and ways of life. Instead of purposefully excluding local people, the protected areas should try to engage them in the activities that will ensure the effective conservation of biodiversity within the protected area. If this means taking poachers and turning them into park rangers and guides, then the local people will see former exploiters as protectors and stewards. These kinds of role models may be the most effective means of changing the local peoples' attitudes from opposition to helping and nurturing protected areas.

New push for protected areas in Indonesia is underway

The Indonesian government has pledged to create and strengthen protected areas in a focused effort to protect at least 10% of the land area. In some areas this means simply protecting conservation areas and enforcing laws. On Sumatra, this means expanding the protected-area system, increasing total area under protection and preserving important habitat for critically endangered species such as the Sumatran tiger (*Panthera tigris sumatrae*), the Sumatran elephant (*Elephas maximus sumatrensis*), the Sumatran rhino (*Dicerorhinus sumatrensis sumatrensis*) and many other constituents of endemic flora and fauna. The

Sumatran context for protected areas, however, is a complicated matrix of local indigenous communities with traditional land-use practices and modern means of exploitation.

The story is not a pessimistic one, however. As one of the foremost examples of success in the establishment of new protected areas in Indonesia, we highlight Tesso Nilo on the island of Sumatra. The area of Tesso Nilo is the last remaining contiguous primary lowland rainforest on Sumatra, and was saved from complete transformation to industrial plantations by a new partnership between conservation organizations and local governmental agencies. Unfortunately, Tesso Nilo had already lost a third of a million hectares from 1984 to 1998 and had fewer than 350 Sumatran elephants when it was declared a protected area. A partnership between the World Wide Fund for Nature (WWF) and more than 20 local NGOs and governmental organizations, however, has secured funding from the Critical Ecosystem Partnership Fund and shown how broad-scale collaboration between NGOs and governmental agencies can be effective in delivering conservation goals.

Although there are many problems that plague the effectiveness of biodiversity conservation in protected areas, most share two common ultimate causes: lack of awareness and overpopulation. The effects of these issues can be mitigated with a series of comprehensive public awareness plans and/or community education programmes. These plans and programmes must be realistic and focus on the facts and not on opinions. Simply reducing the scale of human-population growth and enabling a fact-driven curriculum of basic environmental biology and ecology could make the difference between losing all or just some of the remaining biological diversity. Incorporating new approaches from the fields of anthropology and psychology with explicit treatment of human emotions, identities and values can help conservation efforts tremendously (Saunders *et al.* 2006). In addition, it will be increasingly important to weigh different types of spending (e.g. education, social programmes, protected-area fences, etc.) in order to achieve biodiversity conservation (see Cleary 2005); sometimes the best way to spend conservation money is not to directly invest in programmes that have short-term effects, but manage funds and invest in long-term projects or sustainable programmes with the possibility of generating more funding in the future. Most of our suggestions can be implemented in a comprehensive educational programme aimed at various audiences within Indonesia (see Brewer 2006), including governmental support of many programmes already underway. Other suggestions require a substantial and dependable international investment in global biodiversity; we believe that this investment should be managed by a third party who also manages a monitoring programme gauging the effectiveness of the conservation plans being implemented (see below).

Suggested strategies

One of the best ways to halt further habitat alteration and degradation is to restore and reforest degraded land within and around protected areas, prioritizing corridors linking existing protected areas. Although not an easy endeavour, by investing in habitat restoration formerly degraded land can be used to connect protected areas and take advantage of opportunities for expanding protected areas through buffer zones, biodiversity corridors, new land-use policies or other ways that may not be under the control of government agencies. Conservation workers can designate buffer zones around core protected areas to accommodate local uses (like natural-resource harvesting) and benefit conservation objectives by trading lower degrees of protection for local stakeholder support. This will mandate the need for enforced boundaries of protected areas and identification of zones within them as areas of total protection where no harvesting or hunting will take place.

Another important suggestion is to clearly define conservation goals and communicate them to all concerned parties in an unbiased way. Doing this as early as possible is important to ensure that all stakeholders fully understand their part in the process and success of the protected area (Agardy 2000; Mascia 2003). Establishing objectives specific to each protected area by including the suggestions of all stakeholders is a way to initiate these communications.

Making the objectives of each protected area as cost-effective as possible by using alternative methods, training and hiring local people, and using other local resources whenever possible helps conservation dollars go further. Augmenting the social and economic value of protected areas by boosting benefits to the people living in and around them, will encourage people to be a part of the protected-area management and increase the chances for its long-term viability. This is a business-model-based strategy that needs outside expertise and multidisciplinary collaboration (Cleary 2005). Developing an economic incentive programme wherein people receive financial benefit for conserving biological diversity could be at the core of such a programme, but we realize that it is a complex issue with many other important aspects that should be considered before being implemented (Folke 2006).

In a similar fashion, quantifying and advertising benefits that the local people enjoy from the protected area will put more emphasis on what people are receiving from conservation, and not what they are giving up, ensuring that local communities value protected areas. Designing monitoring projects that track benefits through time and include stakeholders in the monitoring processes will be critical for communicating these benefits. Including all types of information (e.g. scientific and local knowledge) in long-term monitoring

strategies to assess successes in the scientific, social and economic aspects of conservation is important. By obtaining international support and funding to conserve these resources, we can also encourage international monitoring of parks, protected areas and natural resources.

Population stabilization is perhaps the first place to start any realistic long-term biodiversity conservation and environmental protection plans. Completing the governmental goals of the Population Control Act through community education, outreach and family planning incentives will encourage more compliance in places where population growth rates are still extremely high. This is one of the most relevant subjects for an environmental education programme aimed at biodiversity conservation and development and has Indonesian governmental support.

Implementation and enforcement of a complete moratorium on illegal logging in protected areas should be a top conservation goal, on Sulawesi and the rest of Indonesia. This will mean targeting corruption (see Smith *et al.* 2003) by eliminating the benefits of corruption, enforcing anticorruption laws, and rewarding lawful practices and illegal deforestation whistle-blowers. Again, we appreciate the complexity and difficulty of such a strategy, but we feel that it is critical to make a concerted effort now instead of waiting until we are forced to act. We also applaud the concerted efforts of the new Indonesian government and their discrete targeting of corruption and illegal logging across the archipelago.

To make conservation strategies more realistic and effective, we suggest broadening environmental education at all levels aiming at issues that face Indonesia: pollution, overpopulation, resource management, watershed protection, air quality, slash-and-burn agriculture, protected-area management, endangered-species protection and fisheries management. As natural-resources are squandered (often with financial support from non-Indonesian sources), many local people are not aware of what they are losing. A corollary should also be to communicate and educate current natural-resource exploiters and harvesters so that they realize that unsustainable harvesting means there will be no resources for their grandchildren to enjoy. Employing these people as park rangers, guides and stewards of protected areas can be a measure of success.

Indonesians can also make protected–area management more of a priority by promoting local and national public awareness through educating local people about the biodiversity found within each area. Promoting pride in protected areas by increasing awareness of endemic organisms found nowhere else on the planet is an excellent strategy that can also elicit funding from international supporters. Appointing local leaders from areas with some stake in the continued services of intact biological systems (air and water purification, etc.) to sit on local management committees is one way to include local people. By empowering them

with tools and resources, they can transmit information to everyone in the area, and implement rules, traditional and otherwise, that the local management committees will use to govern and enforce the use of natural resources.

We also believe that developed countries should start making direct payments for the conservation of biodiversity (Ferraro & Kiss 2002). In Indonesia, this could mean providing financial benefits to people living on the edges of protected areas, salaries for park rangers and monies for environmental education. To help secure funding and infrastructure support for these programmes, we suggest the recruitment of other international conservation organizations and local governmental agencies. As well as establishing and strengthening existing programmes, involving both governmental and non-governmental organizations (NGOs) will facilitate natural-resource management by providing direct technical and financial assistance to communities and leaders. To gain access to conservation monies through direct payments, transparent monitoring of conservation goals must accompany protected-area management plans. We suggest that these be managed by a third party, whose biases will not jeopardize the success of the conservation project (i.e. avoid corrupt practices, kick-backs, boodles and pay-offs).

Conclusions

Protected areas currently contribute to conserving biodiversity in Indonesia, but if conservation practitioners want to improve actual conservation benefits, there are many changes that can be made to contemporary management techniques. Explicit conservation objectives (e.g. 150 breeding pairs of palm cockatoos (*Probosciger atterrimus*); complete effective moratorium on logging, hunting and trapping; educational interpretive centre built for school tours; ranger workshop completed) need to be set and met for effective protected-area management. Moreover, local socioeconomic integration of each protected area should be established (see Mascia *et al.* 2003). For example, a protected area will not shield wildlife from hunting if people living in the adjacent areas are chronically poor or undernourished. In order for protected areas to work, the people living in and around the park must be satisfied with, appreciate and value the objectives of the protected area. Including and educating local stakeholders is a crucial aspect of a successful protected-area management scheme (Wells *et al.* 1992).

We realize that the tasks at hand are daunting, require tremendous re-evaluation of individual and societal goals, and will be difficult in the best situations. We also know that people from widely disparate disciplines can and will have to work together in order for cohesive and feasible management plans

and conservation strategies to be made effective (see Adams *et al.* 2004). Our hope is to see an integration of human-welfare and poverty-alleviation projects with biodiversity conservation in and outside of protected areas. A multidisciplinary approach to these problems will need to involve experts in business, conservation biology, environmental law and social sciences, with policy makers and individual members of the society playing lead roles. Academic institutions, governmental and non-governmental agencies alike must find a reasonable balance of development and conservation by working together, finding financial support and facilitating interdisciplinary conservation projects that focus on protected areas.

Conservation in Indonesia presents similar challenges to those of other tropical rain forest areas in Southeast Asia (Stolton & Dudley 1999). Although the islands of Indonesia have specific differences in levels of endemism, species diversity and composition, the same trends are occurring throughout the area (Sodhi *et al.* 2004). Environmental education, enforcement of natural-resource regulations, family planning and local economic incentives to conserve biological resources may be critical answers to some of the most serious challenges to biodiversity conservation. At the national level, however, increasing pressure has to be exerted on transparent land-use planning, effective protected-area management, and equitable use of natural resources. Careful implementation of these strategies should be done with the help of local and international conservation NGOs as well as support from government sponsored agencies and programmes. The education and empowerment of local communities that utilize natural resources in protected areas should be more of a conservation target than the complete exclusion of these stakeholders. Only by enlisting their help will protected areas be effectively and sustainably managed. Defending protected areas for conservation means changing attitudes about natural-resource exploitation and offering viable alternatives to habitat destruction and unsustainable practices of natural-resource use.

One of the most important approaches gleaned from case studies seems to be transparent inclusion and communication with all stakeholders in an unbiased manner. Moreover, even though incorporating local people into a 'conservation and development' scheme has been heavily criticized, we suggest that local stakeholders be included whenever possible and that education programmes be specifically aimed at people that live in and around protected areas. Delivering concise conservation strategies and reasonable alternatives to natural-resource exploitation should be at the heart of these education programmes. Another widely successful approach is to give all stakeholders the same set of conservation goals with distinct objectives that are to be completed in order to fulfil the goals. While these and other general guidelines can be used for most

situations, we remind conservation workers that each protected area should be treated as a unique scenario. Many of these approaches are already in practice to some degree in Indonesia and on Sulawesi; increased financial support from the international community can increase their effectiveness.

Summary

As we learn more from experiences garnered through the successes and failures of conservation areas, our depth of understanding of effective strategies grows. Implementation of new ideas (e.g. including more stakeholders in partnerships for protected-area management) and conservation tools (e.g. business marketing and public awareness campaigns) has augmented our ability to both maintain existing protected areas and recruit new ones. Based on our collective experiences across the Indo-Malaya Archipelago we have reviewed both the problems we have seen in protected areas and suggest approaches to successfully increase conservation effectiveness across the region. Although we feel that current measures of protection are not being effectively activated in most protected areas we have worked in, there is reason to believe that realistic conservation strategies can be effectively supported and existing inefficient trends can be reversed. We suggest the expansion of the current protected area through restoration and reforestation, linking existing areas through a network of corridors, inclusion and education of all possible stakeholders, explicit demarcation and communication of conservation goals, and monitoring of the social, economic and biological indicators of success.

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6

Birds, local people and protected areas in Sulawesi, Indonesia

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Introduction

Given the rapid loss of tropical forests (Achard *et al.* 2002) and the probable consequent extinction of native biotas (Sodhi *et al.* 2004a), protected areas (PAs) are pivotal for the conservation of remaining biodiversity (Rodrigues *et al.* 2004). However, the disappearance and degradation of tropical forests both within and outside the borders of PAs (e.g. commercial logging and agricultural encroachment; Curran *et al.* 2004), continues to undermine their ecological value (Liu *et al.* 2001). It is therefore important to determine the conservation value and underpinnings of resource harvesting in PAs.

Apparent conflicts between conservation and development could possibly have been avoided if biological and social knowledge were considered during land-use planning, including the design of PA networks (Terborgh *et al.* 2002; but see Kremen *et al.* 1999). Poor ecological and sociological data are impeding conservation efforts in Southeast Asia (Sodhi *et al.* 2004b). Southeast Asian biotas harbour high proportions of endemism (Myers *et al.* 2000) and the region is expected to suffer a loss of up to 21% of its biodiversity by 2100 if present deforestation rates continue (Brook *et al.* 2003). The Indonesian island of Sulawesi has extraordinary levels of endemic fauna (e.g. 61% and 34% of mammals and birds are endemic, respectively) and is experiencing both intensive human encroachment pressure in PAs and high deforestation rates (Sodhi & Brook 2006). Much of this negative impact, in part, stems from human resettlement

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close to the PA fringes as part of a nationwide transmigration project (Whitten *et al.* 2002). As such, Sulawesi represents an appropriate case study for assessing impacts of anthropogenic activities on the tropical biodiversity. In this study, we focused on two main contemporary challenges that are particularly central to the long-term survival of PAs for effective conservation of globally important biodiversity in Southeast Asia.

Importance of PAs for forest and endemic avifauna

Widespread isolation and shrinking tropical PAs (DeFries *et al.* 2005) have compelled conservation biologists to investigate ecological impacts of habitat disturbances on biodiversity, particularly endemic and forest-dependent species to develop viable conservation measures for their protection. Birds are frequently used as ecological indicators as they are relatively easy to sample, have critical roles in ecosystem processes (e.g. pollination and seed dispersal; Daily 1997), have high species richness congruity with other taxonomic groups (Howard *et al.* 1998), and are also vulnerable to extinction following habitat perturbations (e.g. Sodhi *et al.* 2004a). We assessed the significance of PAs in conserving the avian species richness of Sulawesi by comparing the number and population densities of species (i.e. forest, endemic and unique species) and density of individuals for selected species between the inside and outside of the PAs.

Human attitudinal influences on resource harvesting in PAs

Unless increasingly prevalent PA–human conflicts are adequately resolved, PAs may become ineffective for conserving the imperilled tropical biodiversity (Kramer *et al.* 1997). Previous attitudinal studies have revealed that conservation attitudes and extent of natural-resource extraction might be closely associated (Newmark *et al.* 1993; Gillingham & Lee 1999). Hence, understanding the impact of conservation attitudes on resource-harvesting behaviour will be crucial for the development of a more holistic conservation strategy, such as outreach programmes (Mehta & Heinen 2001). We assessed conservation attitudes (i.e. level of support for PA establishment) and intensities of illegal human resource-extraction activities within PAs of local households. Furthermore, we investigated the effects of conservation attitude on household patterns of illegal resource harvesting (e.g. wildlife hunting) in PAs.

We believe that our study can provide ecologically and sociologically relevant data needed for tropical biodiversity conservation and may help to demonstrate the connectedness between human attitudes and the effectiveness of conservation strategies.

Materials and methods

Study sites

We studied eight PAs located on the main island of Sulawesi (118°–126°E and 2°N–6°S; Table 6.1). Protected areas situated in the north-eastern and northern part of Sulawesi include Gunung Manembo-nembo Wildlife Reserve (GM), Tangkoko-Batu Angus and Dua Saudara Nature Reserves (TD), Gunung Ambang Nature Reserve (GA), Bogani Nani Wartabone National Park (BN), Gunung Tinombala Nature Reserve (GT) and Gunung Sojol Nature Reserve (GS), while Lore Lindu National Park (LL) and Rawa Aopa Watumohai National Park (RA) are situated in the central and south-eastern part of the island, respectively (Table 6.1). The total area of these PAs represents nearly 66% of the total protected terrestrial area (i.e. wildlife and nature reserves, and national parks) on the main island of Sulawesi (Directorate General of Forest Protection and Nature Conservation 2003). Vegetation of PAs and their surroundings, and climate have been described elsewhere (Lee *et al*. 2007).

Data collection

Birds were surveyed using fixed-time and fixed-radius point count sampling methods. We surveyed protected areas for birds and interviewed local inhabitants from 33 different villages distributed among the PAs during the course of almost a year (October 2003–August 2004). Depending upon the size of a PA and logistical restrictions, sampling sites were randomly selected to assume spatial independence and site heterogeneity (i.e. sites are located at opposite ends of PAs), whenever possible, with point count stations placed along existing trails and paths. Each sampling site had a similar number of point count stations inside and outside the PAs (at least 250 m but not more than 2 km from either side of the official PA boundaries) (Table 6.1). Further, we reduced potential sampling bias on bird species compositions due to altitudinal differences by sampling inside and outside PAs at corresponding elevations.

Avian sampling

We sampled birds at each point count station between 06.00 and 10.00 (peak bird activity). Two observers conducted all bird surveys during fair weather (avoiding heavy rain and wind). At each point count station, each observer recorded all birds seen or heard within a 50 m radius for 10 minutes, excluding nocturnal and migratory species, and birds flying over the canopy. Point count stations were placed at least 250 m apart so as to assume spatial independence.

Attitudinal sampling

We conducted 660 interviews at the household level, where each household comprises the central unit of shared resource utilization in villages surrounding PAs (Casley & Lury 1981). Interviews were a proportional random sampling design separated by occupational typologies (i.e. farmer, labourer, skilled and fisher), as far as possible, at individual villages (Moser & Kalton 1972). Interviews were orally administered in Bahasa Indonesian by two people. The extent of support for the establishment of PAs (i.e. conservation attitude) was categorized with a symmetric, three-point Likert scale with a central neutral category: oppose, neither oppose nor support (i.e. neutral), and support. To improve relevancy and clarity, we pilot tested the questions with village leaders before administering them to villagers. Despite generally being cost-effective, a major weakness of interviews is that interviewees may not willingly give negative responses to a third party and cover up illegal exploitation practices (e.g. wildlife hunting), thereby introducing potential bias on conservation attitudes of local communities (de Boer & Baquete 1998). Nevertheless, we tried to minimize this effect by assuring anonymity and stating our independency from official PA management units (i.e. district-level conservation area agencies) throughout the interviews.

We recognized seven main types of illegal forest-resource harvesting activities and exploitation (hereafter resource harvesting) commonly observed within PAs by the resident park rangers. The ascending rank scales on resource-harvesting activities represent increasing extents of resource extraction, based on an assumption that commercial (as opposed to subsistence) extraction is more intensive and ecologically unsustainable. Responses on extent of wildlife hunting (pooled data due to small sample sizes for individual animal species), timber extraction (i.e. fuelwood and building), and non-timber collection (i.e. rattan (e.g. *Calamus zollingeri*; Siebert 2004) and palm (e.g. *Livistona rotundifolia*; O'Brien & Kinnaird 1996a), were recorded on a three-point rank scale: no harvest, subsistence harvest, and commercial harvest (O'Brien & Kinnaird 1996b; Lee *et al.* 2000). Responses on degree of agricultural production (i.e. 'forest garden'; e.g. The Nature Conservancy 2002) were categorized on a five-point rank scale: none, <1 ha for subsistence, <1 ha for commercial, 1–5 ha for subsistence, 1–5 ha for commercial (pooled data due to small sample sizes for individual crops, e.g. cocoa). Degree of land clearing for agriculture (Lee *et al.* 1999) was recorded using a two-point rank scale: cleared or not cleared.

Statistical analyses

We defined forest bird species as those that occur mainly in primary lowland, hill and montane forests, in addition to tall secondary forests,

following Coates & Bishop (1997). Endemic bird species are defined as those whose distributions are confined to the main island of Sulawesi, following Dickinson (2003). Nomenclature of bird species follows Dickinson (2003). To assess the significance of PAs in conserving bird species richness and abundance, we compared the number of species and density of individuals of forest and endemic birds inside and outside of PAs. The numbers of unique forest and endemic species among the PAs were also evaluated (see Table 6.1 for definition of unique species). Of the observed bird species, we also compared mean density (i.e. log-transformed number of individuals per sampling point) of 12 forest and/or endemic species (i.e. Bay Coucal, *Centropus celebensis*; Caerulean Cuckoo-shrike, *Coracina temminckii*; Spot-tailed Goshawk, *Accipiter trinotatus*; Sulawesi Hawk-cuckoo, *Cuculus crassirostris*; Knobbed Hornbill, *Aceros cassidix*; Sulawesi Hornbill, *Penelopides exarhatus*; Black-billed Koel, *Eudynamis melanorhyncha*; Yellow-billed Malkoha, *Zanclostomus calyorhynchus*; White-necked Myna, *Streptocitta albicollis*; White-bellied Imperial Pigeon, *Ducula forsteni*; Sulphur-bellied Whistler, *Pachycephala sulfuriventer*; and Sulawesi Pygmy Woodpecker, *Dendrocopos temminckii*). These species were reported to be vulnerable to habitat disturbance (Sodhi *et al.* 2005). To investigate the influence of conservation attitudes on household patterns of illegal resource harvesting in PAs, we tested pairwise differences in intensities of resource harvesting among the three levels of support for PA establishment. All statistical analyses were performed in SPSS (Statistical Package for the Social Sciences 2003).

Results

Conservation value of protected areas

Overall, we recorded a total of 17809 individuals of 125 species, including one International Union for the Conservation of Nature and Natural Resources (IUCN) threatened species (i.e. Maleo, *Macrocephalon maleo*). A total of 38 forest and 48 endemic species of birds were recorded, while individuals totalled 2494 forest and 5200 endemic birds were observed (Lee *et al.* 2007).

Notably, higher numbers of species and individuals of endemic and forest birds were detected in the PAs than outside of them. For birds sampled inside PAs, numbers of forest and endemic species ranged from: 10 to 26 (18–38%); and 24 to 35 (40–57%), respectively; while the number of forest and endemic bird individuals ranged from: 76 to 737 (7–43%); and 234 to 836 (27–49%), respectively (Table 6.1). For birds surveyed outside of PAs, numbers of forest and endemic bird species varied from: 3 to 15 (8–22%); and 8 to 23 (22–39%), respectively; whereas the number of forest and endemic bird individuals varied from: 23 to 123 (4–9%); and 63 to 319 (7–44%), respectively (Table 6.1).

Table 6.1 *Summary information for eight protected areas on Sulawesi, including latitude/longitude, area, number of sampling point count stations ('sampling stations') and number of species and individuals of birds recorded*

				No. of species (individuals)											
				Endemic species				Forest species				Overall species		Unique species[b]	
Protected area (abbrev.)	Latitude/ longitude	Area (ha)	Sampling stations	In	Out	In %[a]	Out %[a]	In	Out	In %[a]	Out %[a]	In	Out	Endemic	Forest
Tangkoko-Batu Angus & Dua Saudara Nature Reserves (TD)	1° 34′ 53″ N/ 125° 9′ 43″ E	8750	60	25 (391)	18 (319)	43 (38)	39 (44)	12 (76)	8 (31)	21 (7)	17 (4)	58 (1025)	46 (723)	5	2
Gunung Manembo-nembo Wildlife Reserve (GM)	1° 20′ 54″ N/ 124° 37′ 12″ E	6500	60	24 (239)	14 (160)	46 (40)	30 (30)	10 (104)	6 (48)	19 (17)	13 (9)	52 (603)	46 (541)	4	2
Gunung Ambang Nature Reserve (GA)	0° 50′ N/ 124° 25′ E	8638	60	25 (234)	8 (63)	48 (39)	22 (13)	20 (259)	3 (23)	38 (43)	8 (5)	52 (602)	36 (496)	3	4
Bogani Nani Wartabone National Park (BN)	0° 33′ 38″ N/ 123° 40′ 48″ E	287115	150	34 (836)	18 (288)	49 (39)	27 (19)	20 (282)	10 (64)	29 (13)	15 (4)	70 (2139)	66 (1531)	6	5
Gunung Tinombala Nature Reserve (GT)	0° 35′ N/ 120° 57′ E	37106	90	35 (452)	16 (190)	57 (46)	30 (22)	22 (233)	7 (33)	36 (24)	13 (4)	61 (987)	53 (878)	2	0

Table 6.1 (*cont.*)

Protected area (abbrev.)	Latitude/ longitude	Area (ha)	Sampling stations	No. of species (individuals)											
				Endemic species				Forest species				Overall species		Unique species[b]	
				In	Out	In %[a]	Out %[a]	In	Out	In %[a]	Out %[a]	In	Out	Endemic	Forest
Gunung Sojol Nature Reserve (GS)	0° 34′ 40″ N/ 120° 18′ 40″ E	64448	90	31 (418)	18 (154)	56 (49)	30 (17)	17 (182)	7 (62)	31 (21)	11 (7)	55 (848)	61 (891)	4	4
Lore Lindu National Park (LL)	1° 30′ 47″ S/ 120° 10′ 59″ E	229000	150	32 (697)	23 (248)	47 (35)	33 (16)	26 (737)	15 (123)	38 (37)	22 (8)	68 (1984)	69 (1538)	6	7
Rawa Aopa Watumohai National Park (RA)	4° 23′ 39″ S/ 121° 59′ 31″ E	105194	120	26 (398)	12 (113)	40 (27)	23 (7)	12 (173)	5 (64)	18 (12)	9 (4)	65 (1449)	53 (1574)	3	0

[a] Represents the percentage of overall species and individuals of birds being either endemic or forest.

[b] Unique species is defined as species that occur in not more than four of the eight protected areas.

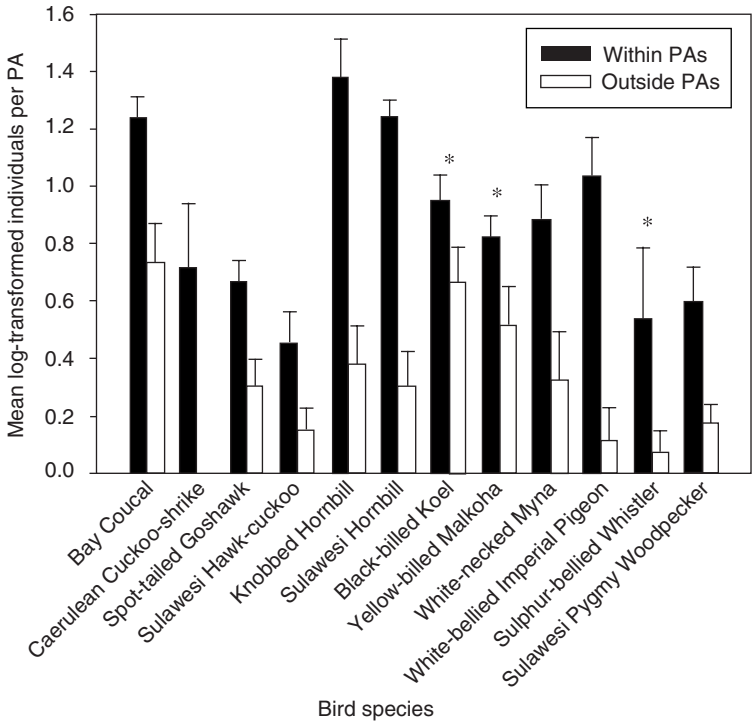

Figure 6.1. Mean log-transformed number of individuals per protected area (PA). All species showed statistical significant differences between inside and outside the PAs, except those indicated by an asterisk. Differences between samples were tested using a t-test for all species (except a Mann-Whitney U-test was used for the Sulphur-bellied Whistler). Error bars represent standard errors. PA = protected area, in this and other figures.

In addition, numbers of unique forest and endemic species ranged from: zero to seven; and two to six, respectively (Table 6.1). In particular, two PAs (i.e. BN and LL; Table 6.1) appear to support larger numbers of unique forest and endemic species than the others. Of the 12 selected species, all, except 3 species (i.e. Black-billed Koel, Yellow-billed Malkoha and Sulphur-bellied Whistler), were significantly more abundant inside than outside across PAs (t-test>2.22, $P<0.05$, df=10–13; Fig. 6.1).

Attitudinal impact on illegal resource harvesting

Of the 660 household interviews, 7% expressed opposition, 23% expressed neutrality and 70% expressed support towards establishment of PAs (Fig. 6.2). Of the 40 households that hunted (6% of total), only nine (<2%) were involved in commercial hunting of wildlife. Of timber products extracted, 2% of

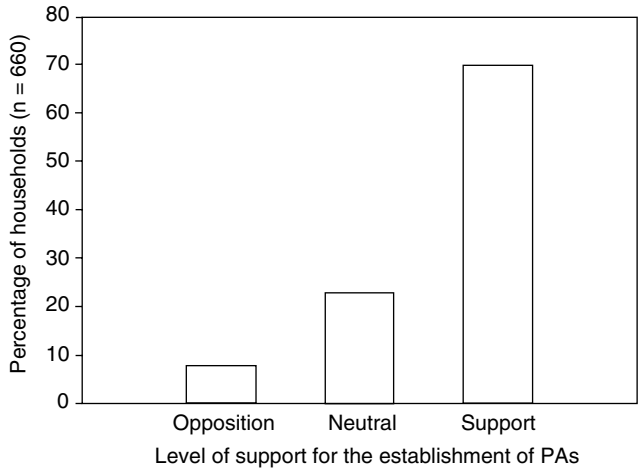

Figure 6.2. Percentages of households with three different levels of support for the establishment of protected areas (PAs) nearby.

all households were commercially collecting fuelwood and 8% were commercially collecting timber for building. Of the non-timber products harvested, 10% of all households were trading extracted rattans and 1% of them were trading palm products. Of the 60 households who have 'forest gardens' in PAs, 8% have land <1 ha for subsistence farming, 35% have <1 ha for commercial farming, 2% have 1–5 ha for subsistence farming, and 55% have 1–5 ha for commercial farming. Approximately 7% of all households reported clearing land for agriculture in PAs (Fig. 6.3).

Dissimilarities among the conservation support levels are evident in every type of illegal resource harvesting except fuelwood and palm collection. Intensities of resource extraction significantly increased with lower support for PA establishment (Kruskal-Wallis test >44.6, df=2, $P<0.001$; Fig. 6.4). For instance, households who opposed establishment of PAs consistently have larger harvesting intensities (i.e. higher mean rank scores) on wildlife hunting, collection of timber for building, collection of rattan, agricultural production and land clearing. However, only households that are neutral and support establishment of PAs do not have significantly different intensities of wildlife hunting (Fig. 6.4).

Discussion

Conservation value of protected areas

Based on our findings, existing PAs remain vital in protecting avifauna of high conservation concern (i.e. forest and endemic species) on Sulawesi. Protected areas contain larger numbers of species of forest and endemic birds,

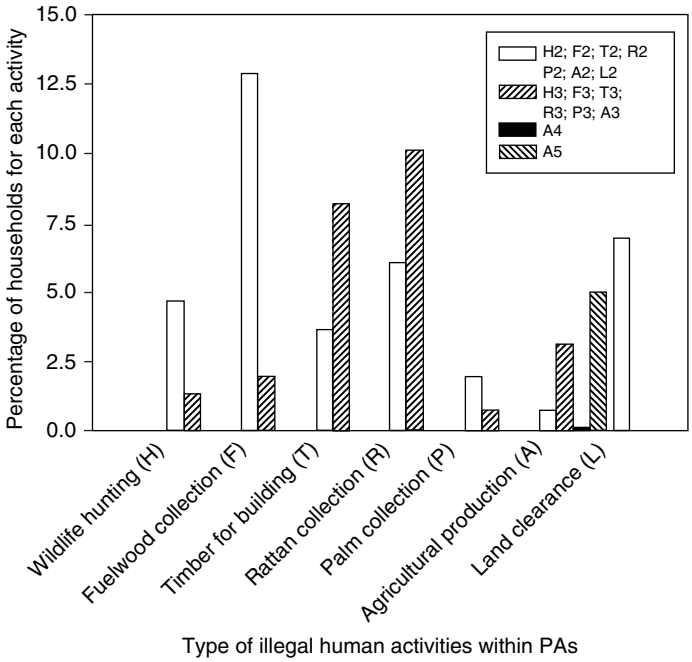

Figure 6.3. Percentages of households with seven different types of illegal forest resource harvesting activities based on the interview responses. Number following activity abbreviation represents a certain scale of an activity type. The scale 2 and 3 represent 'subsistence' and 'commercial' harvests, respectively, for H, F, T, R and P. The scale 2, 3, 4 and 5 for A represent '<1 ha for subsistence', '<1 ha for commercial', '1–5 ha for subsistence', and '1–5 ha for commercial', respectively. The scale 2 represents 'cleared' for L.

as well as higher population densities, when compared to their surrounding areas (Table 6.1).

Of the three IUCN threatened diurnal bird species known to occur within our sampling regions (i.e. North, Central and Southeast) on the main island of Sulawesi, only two individuals from one species (i.e. maleo) were observed in BN (Lee *et al*. 2007). Although all threatened species were previously recorded in some of the PAs (e.g. Snoring Rail (*Aramidopsis plateni*); The Nature Conservancy 2002), they were either not detected, or only in small numbers in our study probably due to the limited sampling coverage. For example, Maleos are more likely to be found in the environs of their communal nesting grounds on solar-heated beaches and geothermally heated forest soils (Dekker 1990). Regardless, the difficulty in locating these species seems to suggest that they may be occurring in very low densities in sampled areas of PAs, and therefore may also be particularly susceptible to global extinction, especially with increasing loss of forested habitats, including those within PAs (Holmes 2000). Clearly,

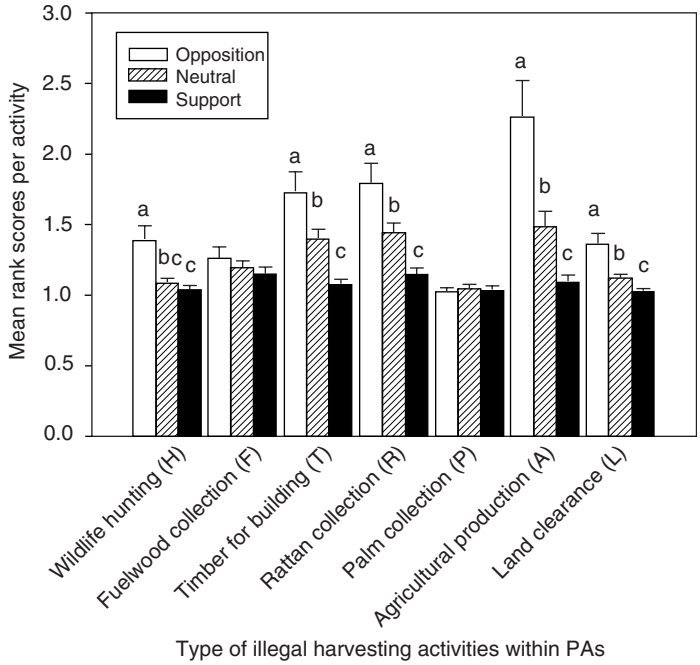

Figure 6.4. The extent of forest resource harvesting activities among the three levels of support for the establishment of protected areas (PAs). Error bars represent standard error. All resource harvesting activities, except fuelwood and palm collection, showed significant differences ($P > 0.05$) in a Kruskal-Wallis ANOVA analysis. Pairwise differences were tested using Tukey-type test (Zar 1999). Levels of support that are not significantly different share the same letter. A mean score of 1 indicates lack of resource harvesting activity (see text).

more data is urgently needed to assess viability of PAs to conserve these vulnerable species.

Nonetheless, forested areas within PAs may improve avifauna diversity and density by sustaining larger and more viable populations with lower chances of local extinction, or by providing more vegetation complexity for a wider range of ecological niches needed to maintain more species (James & Wamer 1982). Further, the larger areas of undisturbed primary and secondary forests in PAs may present more diverse and favourable microhabitats with distinctive microclimatic environments (e.g. understorey) for forest dependent birds (e.g. Sulawesi Babbler, *Trichastoma celebense*). Indeed, most selected species (75%) were observed to be significantly more abundant inside PAs (Fig. 6.1). This further corroborates results obtained by Sodhi *et al.* (2005). Distinct from non-forest species, which are ecologically more flexible, forest dependent species (e.g. White-bellied Imperial Pigeon; Castelleta *et al.* 2000) seem to be confined to PAs where there is usually more unperturbed native vegetation, possibly suggesting

their sensitivity to habitat disturbance (Lee *et al.* 2007). Disturbance (e.g. alteration of native tree cover) may influence diversity and composition of tropical bird communities, either through the availability of microhabitat and nesting sites or by affecting prey abundance (Laurance *et al.* 2002; Sekercioglu *et al.* 2002). As such, poor forest and endemic species richness and abundance in surrounding areas of the PAs may likely be due to habitat loss from anthropogenic disturbances (Castelletta *et al.* 2000) or reduction in microhabitats from land cover modification (Peh *et al.* 2005).

Furthermore, consistent with other findings, BN and LL (Table 6.1) appear to be the two main PAs with a relatively larger number of unique species among PAs. This highlights the importance of BN and LL (i.e. the two largest national parks) in protecting the lowland and montane avifauna in Sulawesi, respectively (Coates & Bishop 1997; The Nature Conservancy 2002).

Attitudinal impact on illegal resource harvesting

In spite of the importance of studies on how conservation attitudes directly seem to have an impact on the effectiveness of biological conservation, it is apparent that the dearth of such critical information has prohibited development of viable conservation strategies. Nevertheless, as with previous studies (Abbot *et al.* 2001; Holmes 2003), we have documented an association between conservation attitudes and intensities of resource extractions by households close to PAs. In essence, there is a direct relationship between higher support for the establishment of PAs and lower intensity of resource harvesting for most illegal human activities (Fig. 6.4). This may be, in part, due to the increasing involvement of local people in the management of PAs and hence possibly a decline in harvesting of forest resources (Mehta & Kellert 1998; Lee *et al.*, unpublished data).

Above all, the relatively higher scores of five illegal resource-harvesting activities for households with negative and neutral support for the PAs are disturbing. Among cryptic human disturbances, the direct loss of wildlife through hunting represents one of the most severe threats to the extirpation of wildlife populations in Sulawesi (O'Brien & Kinnaird 1996b). While wildlife trade in both unprotected and protected species in Northern Sulawesi (with an extensive network across the whole island) is extremely pervasive (Lee *et al.* 2005), our results revealed that most households never hunt (i.e. >94%). This is contrary to findings that subsistence wildlife hunting is widespread in PAs in Northern Sulawesi (Lee *et al.* 1999; Lee *et al.* 2000). As such, the relatively low observed local hunting pressure is possibly a consequence of bias of responses, particularly when concealing illegal exploitation practices such as illegal

wildlife hunting (de Boer & Baquete 1998). Regardless, bushmeat hunting remains a severe problem for Southeast Asian wildlife (Chapter 4), and therefore, it is pertinent to examine the dynamics of subsistence/commercial hunting in PAs, especially in Northern Sulawesi.

Agricultural encroachment (e.g. 'forest garden') can also have dire direct impacts on biodiversity in PAs through habitat loss and degradation. For instance, densities of forest-dependent birds have been shown to be negatively affected by loss of natural habitats (i.e. primary forest) outside PAs in Sulawesi, perhaps due to a decrease in optimal habitats (Lee *et al.* 2007). In addition, the trend of intensive and ecologically unsustainable selective subsistence logging (Lee *et al.* 2000) and commercial rattan harvesting (Siebert 2004) is a developing threat to the ecological intactness of the PAs. Additionally, non-timber resource extraction could also indirectly decimate wildlife populations by increasing accessibility of remote areas in PAs to hunters (Peres & Lake 2003). Clearly, more studies are needed to investigate effects of cryptic human disturbances on tropical biodiversity.

Conservation implications

Two key implications for the protection of biodiversity on Sulawesi may be drawn from our study. First, PAs consistently recorded higher numbers of species and higher population densities of forest and endemic birds, than their surrounding areas. This implies that PAs, which generally have a lower degree of anthropogenic disturbance, are crucial to bird species of high conservation concern, and should therefore remain as one of the most important conservation strategies. Second, the significant negative association between extent of support for the establishment of PAs and the intensity of resource harvest for illegal activities (e.g. wildlife hunting and selective logging of timber for building) suggests the potential for alleviating extraction pressures through fostering more positive attitudes towards conservation for the effective protection of biodiversity. As such, ecological and sociological studies such as ours should be undertaken in other Southeast Asian areas so more tangible conservation actions can be derived for its imperilled biodiversity (see Chapter 3).

Summary

We determined the relative conservation value and human support for protected areas (PAs) in Sulawesi (Indonesia). First, we assessed the significance of PAs in conserving the avian species richness and population densities in Sulawesi. We show that PAs consistently housed higher numbers of forest and

endemic bird species and greater population densities than their surrounding areas. This implies that PAs are crucial to bird species of high conservation concern, and should therefore remain one of the fundamental conservation strategies. Second, we evaluated the influence of conservation attitudes on illegal resource extraction among local households around the PAs. We reveal that conservation attitudes are generally positive. Not surprisingly, however, negative conservation attitudes increased intensity of resource harvesting in PAs. This suggests that fostering favourable support for conservation (i.e. increasing positive conservation attitudes) may help to alleviate some resource-harvesting pressures. In conclusion, we suggest that both more ecological and sociological studies need to be undertaken in other Southeast Asian areas so that tangible conservation actions and the improvement of conservation attitudes can be derived for its imperilled, yet globally important, biodiversity.

Acknowledgements

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7

Importance of protected areas for butterfly conservation in a tropical urban landscape

LIAN PIN KOH

Introduction

Urbanization has become the globally prevailing source of land-use change (Fig. 7.1; United Nations Centre for Human Settlements 1996). Unlike other kinds of habitat disturbance, such as commercial logging, urbanization often irreversibly replaces natural habitats (e.g. primary forests) with persistent artificial ones (e.g. human cities), resulting in long-lasting negative impacts (e.g. species extinctions) on the native biodiversity (Stein *et al.* 2000). Due to the traditional focus of conservation research on 'natural' ecosystems (e.g. undisturbed forests), urban ecology has received relatively little emphasis from conservation biologists (Miller & Hobbs 2002). Recently, some authors have argued that conservation planning should include reconciliatory measures that enable human activities to proceed with minimum displacement of the native species (Dale *et al.* 2000; Miller & Hobbs 2002; Daily 2003; Rosenzweig 2003). An example of such a conservation strategy is the creation and maintenance of artificially revegetated habitats (e.g. urban parks), where certain native species can persist (Kendle & Forbes 1997).

As many countries in Southeast Asia are rapidly developing, urban areas will likely be a common feature of the regional landscape. Therefore, a current challenge is to understand the individualistic responses of species to urbanization in Southeast Asia, including the mechanisms underlying

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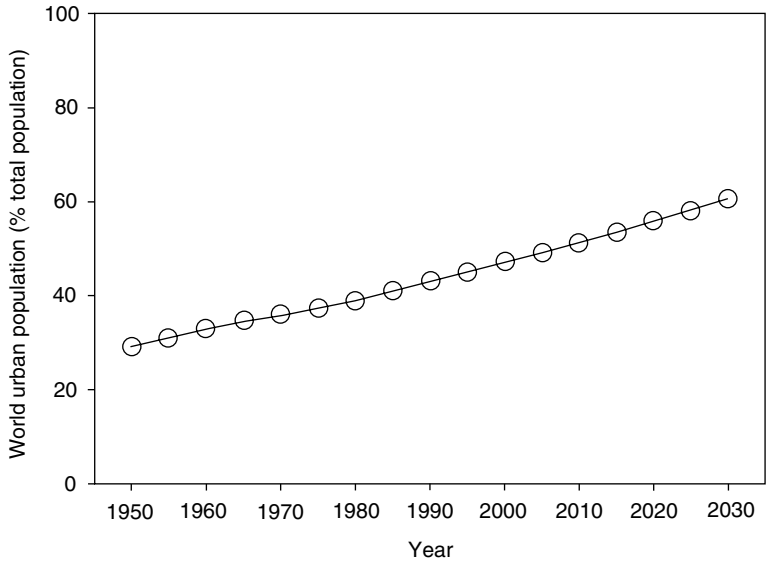

Figure 7.1. A graph depicting the increasing trend in the proportion of the world's population living in urban areas (United Nations Centre for Human Settlements 1996).

such responses, in order to identify vulnerable species and to develop effective measures for their conservation. Furthermore, it is critical to evaluate the effectiveness of different habitats, including artificially revegetated urban parks, in maintaining the diversity of native species in urban landscapes.

I have three primary objectives. First, I test the hypothesis that forest reserves contain the highest number of species, number of unique species, density of species and density of individuals compared with forest fragments and urban parks (see Koh & Sodhi 2004 for definitions of different habitat types). Second, I investigate how the distribution of butterflies among the different habitats may be affected by environmental factors (e.g. canopy cover) by testing the hypothesis that butterfly species respond individualistically to environmental factors (e.g. canopy cover) that affect their distribution across the habitats. Third, I examine the important determinants of butterfly species richness (e.g. area) in existing urban parks so as to improve future park design and management for effective butterfly conservation by testing the hypothesis that the number of potential larval host plant species occurring in the park is the best predictor of butterfly species richness. Although native forests are important for the conservation of some taxa (see Chapter 6), urban areas could provide opportunities for wildlife management and conservation.

Methods

Study sites

This study was conducted in the Republic of Singapore (103° 50′ E, 1° 20′ N). A total of 39 study sites were opportunistically selected and classified into four habitat types a priori (i.e. forest reserves, forest fragments, urban parks adjoining forests and isolated urban parks) to assess their value in conserving butterfly diversity in Singapore (Table 7.1; see Koh & Sodhi 2004 for detailed description of habitat types).

Butterfly sampling

To compare butterfly diversity and composition among the study sites, butterflies were surveyed using the transect walk method (Pollard & Yates 1993; Koh *et al.* 2002; Koh & Sodhi 2004). The number of randomly placed 100-metre transects at each site varied from one (e.g. Ang Mo Kio Garden East Park) to fourteen (i.e. Nee Soon Forest), depending on the area of the site (Table 7.1). Each butterfly transect was surveyed three times between 17 June 2002 and 26 June 2003. Butterflies that could not be identified in the field or captured were noted and excluded from the sample (1.9% of total sample). I used D'Abrera (1982, 1985, 1986), Fleming (1991), Corbet & Pendlebury (1992) and Neo (1996) to identify butterfly species. Only true butterflies were included in this study (i.e. excluding Hesperiidae). Species from the family Lycaenidae were also excluded due to the difficulty of identifying and capturing them in the field (Hill *et al.* 1995; Ghazoul 2002). Each transect took an average of 12.77±0.10 min (mean± standard error). I only conducted butterfly surveys when prescribed minimum weather conditions were met (i.e. no rain) and between the periods of 10.00 and 15.00 hours, corresponding to peak butterfly flight activity (Moore 1975; Pollard *et al.* 1975; Pollard & Yates 1993).

Environmental variables

To determine the effects of environmental factors on butterfly distribution, I measured the following environmental variables within circular plots of five-metre radius located at the start and end points of each butterfly transect: the canopy cover of the forest, using a spherical densiometer (Lemmon 1957); the number of trees less than 30-centimetre in diameter at breast height (DBH); the number of trees greater than 30-centimetre DBH; the number of dead trees; the estimated percentage shrub cover; the mean leaf litter depth; the estimated percentage flowering shrub cover; the number of trees with open flowers or fruits; the temperature and relative humidity using an Oakton Digital

Table 7.1 *Study sites in Singapore, including habitat type, area, number of transects surveyed, and total number of species and individuals of butterflies recorded (Koh & Sodhi 2004)*

Habitat type	Site	Area (ha)	No. of transects	No. of species	No. of individuals
Forest reserves	Lornie Forest	54.26	4	8	25
	Bukit Timah Nature Reserve	245.29	11	22	207
	MacRitchie Forest	462.85	12	24	227
	Nee Soon Forest	1147.11	14	27	308
Forest fragments	Woodlands East Forest	2.46	1	2	3
	Clementi Woods Forest	3.32	1	1	3
	Bedok Reservoir Forest	4.22	1	3	3
	Singapore Botanic Gardens Forest	5.61	1	5	22
	Labrador Forest	8.55	2	8	48
	Ang Mo Kio Garden West Forest	10.72	1	5	8
	Yishun Forest	17.48	1	7	11
	Telok Blangah Forest	30.72	1	3	6
	Kent Ridge Forest	32.53	2	4	19
	Bukit Batok Town Forest	34.34	2	2	9
	Mount Faber Forest	35.28	2	7	26
	Bukit Batok Nature Forest	41.31	2	7	12
	Holland Woods	65.93	4	12	77
	Bukit Batok West Woods	72.85	3	6	10
Urban parks adjoining forests	Bukit Batok Nature Park	0.95	1	12	25
	Telok Blangah Park	1.78	1	13	92
	Bukit Batok Town Park	2.42	1	7	11
	Labrador Park	4.35	1	8	44
	Woodlands East Park	4.89	1	6	20
	Lower Peirce Reservoir Park	5.03	1	11	19

Table 7.1 *(cont.)*

Habitat type	Site	Area (ha)	No. of transects	No. of species	No. of individuals
	Yishun Park	5.09	1	4	9
	Kent Ridge Park	7.70	2	8	58
	Mount Faber Park	8.33	2	14	89
	Clementi Park	8.53	2	11	32
	MacRitchie Reservoir Park	11.84	2	8	25
	Ang Mo Kio Garden West Park	22.95	1	9	29
	Singapore Botanic Gardens Park	44.16	3	16	62
	Bedok Reservoir Park	52.85	2	3	9
Isolated urban parks	Ang Mo Kio Garden East Park	6.68	1	9	26
	Sun Plaza Park	12.24	2	8	24
	Pungol Park	13.07	2	8	62
	Bedok Town Park	14.88	2	12	65
	Bishan Park II	20.28	2	8	50
	Bishan Park I	22.81	2	14	61
	Marina City Park	29.49	4	9	62

Max/Min Thermohygrometer; and the light intensity using a Topcon IM-2D illumination meter. The mean value of each environmental variable for each transect was calculated for statistical analyses.

Urban park variables

To identify the important determinants of butterfly-species richness in urban parks, the following variables were calculated: site area, site edge/area ratio, site isolation, mean value of environmental variables as described above and number of potential host plants (see Koh & Sodhi 2004 for detailed description of each variable).

Statistical analyses

Species richness and composition among habitats

To compare the number of species, number of unique species (i.e. species not found in other habitats) and density of species among the different habitat types, we constructed expected species accumulation curves with 95% confidence

intervals for each habitat type using the analytical formula of Colwell *et al.* (2004) (see Denslow 1995 and Gotelli & Colwell 2001 for discussions of the utility of accumulation curves as a robust method for species richness comparisons). All data sets were rarefied using EstimateS Version 7.5 (Colwell 2005).

Species responses to environmental factors

To determine how different butterfly species respond to environmental variables (e.g. canopy cover), I first performed indirect gradient analysis with non-metric multidimensional scaling (NMS) to ordinate sample units (i.e. transects) in species space (see Koh & Sodhi 2004 for a discussion of the utility of NMS for this purpose). The NMS procedure was performed using the 'autopilot (slow and thorough)' mode in PC-ORD Version 4.14 (McCune & Mefford 1999) with Sorensen distance as a dissimilarity measure. Next, the NMS ordination is related to the measured environmental variables (e.g. canopy cover) by correlating each variable to the two axes of the final optimum two-dimensional ordination space. The Spearman correlation coefficient indicates how well each variable explains the position of samples along that ordination axis. For interpretability, the significantly correlated (i.e. $R > 0.50$) environmental variables were plotted as vectors on a joint plot to show their relationships with the sample scores (see McCune & Grace 2002). A joint plot of environmental variables and species scores (calculated by weighted averaging of the abundances of each species in each sample unit) was also plotted.

Species richness within urban parks

To identify the important determinants of butterfly-species richness in urban parks, simple linear regressions were first performed between each predictor variable (see Table 7.2) and the total number of butterfly species recorded in each park. Only significant predictors ($P < 0.05$) were retained for further analyses. I adopted a three-step procedure to generate a final model of butterfly-species richness in urban parks. First, to satisfy the assumption of multiple regression analysis that predictor variables are not strongly intercorrelated, a simple correlation matrix was used to check for collinearity among the predictors. Second, in order to generate a pool of candidate multiple regression models, I sequentially removed, from the full model, the predictor with the least contribution to model adequacy, based on the decrease in model R^2 values generated by multiple regressions of models when each predictor was removed. Third, I evaluated the relative strength of support for each of the candidate models using the second order model selection criterion (AIC_c), which

Table 7.2 *Butterfly species recorded, including their abundance in the different habitat types (Koh & Sodhi 2004)*

Species	Forest reserves	Forest fragments	Urban parks adjoining forests	Isolated urban parks
Amathusia phidippus (Sp1)	2	0	0	0
Appias libythea (Sp2)	0	1	16	26
Catopsilia pomona (Sp3)	2	20	162	171
Catopsilia pyranthe (Sp4)	2	0	0	0
Catopsilia scylla (Sp5)	0	0	6	15
Cethosia hypsia (Sp6)	4	2	1	0
Chilasa clytia (Sp7)	0	0	2	0
Cirrochroa orissa (Sp8)	2	0	1	0
Cupha erymanthis (Sp9)	5	1	2	0
Danaus chrysippus (Sp10)	0	0	2	0
Danaus melanippus (Sp11)	0	0	1	0
Delias hyparete (Sp12)	15	19	58	21
Doleschallia bisaltide (Sp13)	1	1	0	0
Elyminas hypermnestra (Sp14)	3	8	25	10
Elymnias panthera (Sp15)	6	6	1	0
Eulaceura osteria (Sp16)	13	0	0	0
Euploea mulciber (Sp17)	3	0	2	0
Euploea phaenareta (Sp18)	0	2	0	1
Euploea radamanthus (Sp19)	1	0	0	0
Eurema hecabe (Sp20)	229	78	88	20
Euthalia aconthea (Sp21)	0	0	1	1
Euthalia monina (Sp22)	3	1	0	0
Faunis canens (Sp23)	44	7	0	0
Graphium agamemnon (Sp24)	6	0	1	0
Graphium evemon (Sp25)	7	0	0	0
Graphium sarpedon (Sp26)	13	0	9	0
Hypolimnas anomala (Sp27)	0	0	1	0
Hypolimnas bolina (Sp28)	0	0	0	3
Idea stolli (Sp29)	5	0	0	0
Ideopsis vulgaris (Sp30)	0	0	0	1
Junonia almana (Sp31)	0	0	3	3
Junonia hedonia (Sp32)	8	4	36	28
Junonia orithya (Sp33)	0	0	0	4
Lasippa tiga (Sp34)	99	29	5	0
Lebadea martha (Sp35)	2	0	0	0

Table 7.2 (*Cont.*)

Species	Forest reserves	Forest fragments	Urban parks adjoining forests	Isolated urban parks
Leptosia nina (Sp36)	2	0	5	1
Lexias pardalis (Sp37)	60	0	0	0
Moduza procris (Sp38)	2	0	0	0
Mycalesis sp. (Sp39)	25	35	7	0
Papilio demoleus (Sp40)	1	0	9	11
Papilio demolion (Sp41)	4	0	0	0
Papilio iswara (Sp42)	18	0	0	0
Papilio memnon (Sp43)	0	1	0	0
Papilio polytes (Sp44)	17	12	28	3
Parantica agleoides (Sp45)	1	0	1	5
Pathysa antiphates (Sp46)	2	0	0	0
Phaedyma columella (Sp47)	58	20	35	19
Phalanta phalantha (Sp48)	0	0	1	7
Polyura hebe (Sp49)	1	1	1	0
Tanaecia iapis (Sp50)	14	0	1	0
Tanaecia pelea (Sp51)	101	5	0	0
Thaumantis klugius (Sp52)	1	0	0	0
Troides helena (Sp53)	1	0	4	0
Vindula dejone (Sp54)	9	0	0	0
Ypthima sp. (Sp55)	13	4	9	0
Zeuxidia amethystus (Sp56)	5	0	0	0

is a version of Akaike's Information Criterion that corrects for small sample size (Burnham & Anderson 1998; Anderson *et al.* 2001). The AIC_c procedure selects the most parsimonious model, considering the trade-off between minimizing bias and maximizing precision, using a model's R^2 and imposing a penalty for the number of parameters used in the fitted regression models. All variables were suitably transformed prior to regression analyses to satisfy the assumptions of parametric analyses (Zar 1999).

Results

A total of 56 species and 1898 individuals of butterflies were recorded (Table 7.3). The number of butterfly species recorded from the study sites ranged from 1 (i.e. Clementi Woods Forest) to 27 (i.e. Nee Soon Forest); while the number of butterfly individuals ranged from 3 (e.g. Woodlands East Forest) to 308 (i.e. Nee Soon Forest) (Table 7.1).

Table 7.3 *Results of simple linear regressions of total number of butterfly species on urban park variables (Koh & Sodhi 2004)*

Predictor	*n*	Coefficient	*P*	R^2
Log_{10} Site area[a]	21	−0.215	0.900	0
Edge/area index[a]	21	0.990	0.878	0
Log_{10} Total forest area within 1 km	21	1.066	0.166	0.10
Log_{10} Total forest area within 2 km[a]	21	1.237	0.049	0.19
Log_{10} Total forest area within 3 km	21	1.091	0.054	0.18
Log_{10} Total park area within 1 km[a]	21	1.014	0.301	0.06
Log_{10} Total park area within 2 km	21	0.385	0.701	0.01
Log_{10} Total park area within 3 km[a]	21	0.825	0.406	0.04
Mean canopy cover[a]	21	0.026	0.549	0.02
Mean shrub cover[a]	21	0	0.903	0
Mean number of living trees<30 cm DBH[a]	21	−0.336	0.720	0.01
Log_{10} Mean number of living trees>30 cm DBH[a]	21	0.262	0.959	0
Log_{10} Mean flowering shrub cover[a]	21	0.508	0.818	0.30
Log_{10} Mean number of trees with open flowers or fruits[a]	21	4.200	0.326	5.10
Mean temperature	21	0.245	0.682	0.90
Mean relative humidity[a]	21	0.071	0.456	3.00
Log_{10} Mean light intensity[a]	21	−3.408	0.550	1.90
Number of potential larval host plant species[a]	14	0.171	0.003	0.53

[a] Predictor retained for multiple regression analysis.

Species richness and composition among habitats

Forest reserves (FR) had the highest number of species (Fig. 7.2a), number of unique species (Fig. 7.2b) and density of species (Fig. 7.2c) of the habitats studied. Urban parks adjoining forests (PF) had higher number of species (Fig. 7.2a), density of species (Fig. 7.2c) and butterfly density (Fig. 7.2d) than forest fragments (FF) or isolated urban parks (IP). Generally, FF and IP had lower number of species (Fig. 7.2a), number of unique species (Fig. 7.2b), density of species (Fig. 7.2c) and butterfly density (Fig. 7.2d) than either FR or PF.

Species responses to environmental factors

A graphical overlay of habitat type on the NMS ordination clearly distinguished forest (i.e. FR and FF) from park transects (i.e. PF and IP), reflecting their species compositional differences (Fig. 7.3a). Forest and park transects contain distinct groups of butterfly species (Fig. 7.3b). For example, forest transects were closely associated with *Zeuxidia amethystus* (Sp56), *Thaumantis klugius* (Sp52), *Amathusia phidippus* (Sp1) and *Faunis canens* (Sp23), while park

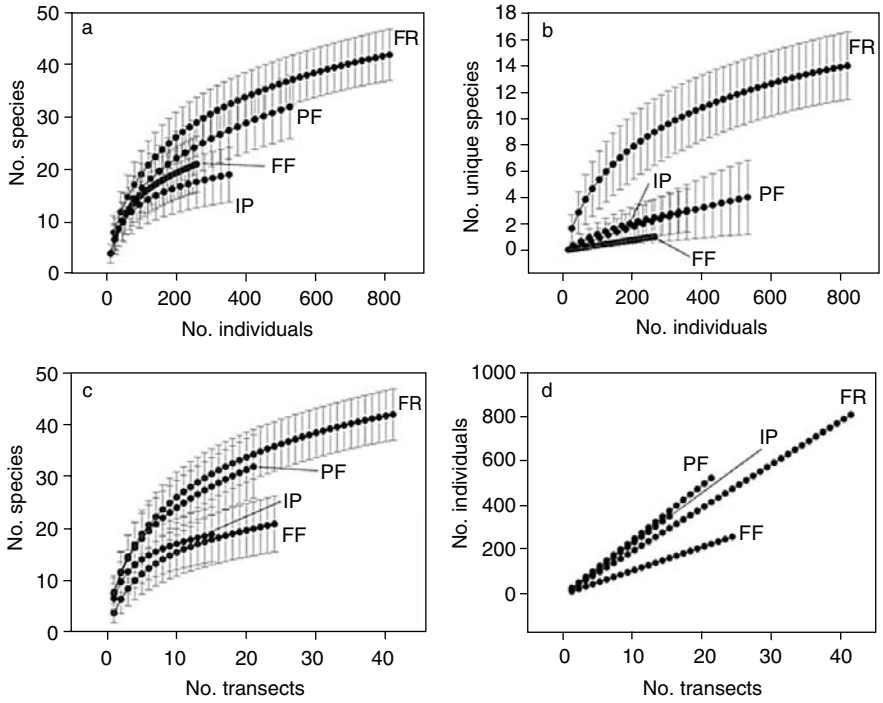

Figure 7.2. Sample-based rarefaction curves of the butterfly communities of forest reserves (FR), forest fragments (FF), urban parks adjoining forests (PF) and isolated urban parks (IP). Curves were rescaled to the number of individuals to compare (a) the number of species and (b) the number of unique species among habitats. Curves were rescaled to the number of transects to compare (c) the density of species among habitats. Curves of the number of individuals against the number of transects were plotted to compare (d) butterfly density among habitats. Error bars represent 95% confidence intervals of the number of species.

transects were associated with *Catopsilia pomona* (Sp3), *Papilio demoleus* (Sp40), *Appias libythea* (Sp2) and *Junonia hedonia* (Sp32). Vector plots of environmental variables (e.g. canopy cover) showed that transects (e.g. in forests) and species (e.g. *Zeuxidia amethystus*) in the upper-right quadrant of the ordinations were positively associated with canopy cover, mean leaf litter depth, number of dead trees and number of trees less than 30-centimetre DBH; while transects (e.g. in urban parks) and species (e.g. *Catopsilia pomona*) in the lower-left quadrant of the ordinations were positively associated with light intensity (Fig. 7.3b).

Species richness within urban parks

The number of potential larval host plant species and total forest area within two kilometres were significant predictors ($P<0.05$) of butterfly species

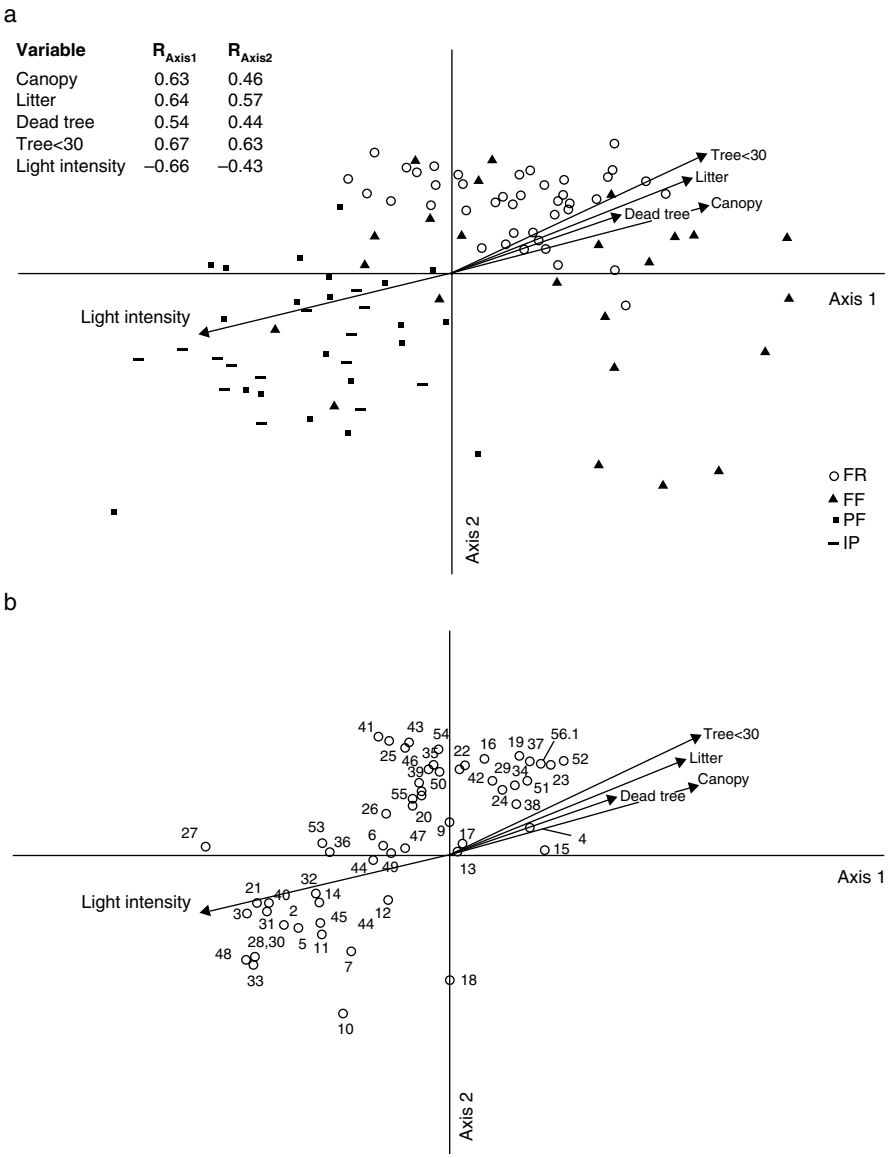

Figure 7.3. NMS ordination joint plot of (a) sample scores and (b) species scores with the significantly correlated (R>0.50) environmental variables, number of trees less than 30cm DBH (Tree<30); mean leaf litter depth (Litter); number of dead trees (Dead tree); canopy cover (Canopy); and light intensity (Light intensity) (Koh & Sodhi 2004). FR, FF, PF and IP represent forest reserves, forest fragments, urban parks adjoining forests and isolated urban parks, respectively. See Table 7.2 for species abbreviations.

richness in urban parks (Table 7.3). These two predictors were not significantly correlated with each other ($P>0.05$). The most parsimonious model selected by AIC_c was the one that included only the number of potential larval host plant species, with the regression equation:

$$\text{No. butterfly species} = 5.71 + 0.17\ \text{HP}$$

where HP is the number of potential larval host plant species. This model was 38.5 times more strongly supported by the data than the full model, in which total forest area within two kilometres was also included. The final optimum model revealed that the number of larval host plant species was the most important factor affecting butterfly species richness in urban parks.

Discussion

Species richness and composition among habitats

Butterfly-species richness in forest reserves is generally higher than that in the other habitat types, likely because the larger areas of forest reserves can sustain larger and more viable populations of species with lower risks of extinction, and contain greater diversities of microhabitats with myriad ecological niches that can support more species (MacArthur & Wilson 1963, 1967; Simberloff 1974; Laurance *et al.* 2002). Furthermore, the last remaining tracts of primary and old secondary vegetation in forest reserves can provide the unique microclimatic conditions (e.g. closed canopy) and specific larval host plants (e.g. *Gironniera subaequalis*) vital to the persistence of specialist butterfly species (e.g. *Eulaceura osteria*) (Khew & Neo 1997). Urban parks adjoining forests were the second most diverse habitat in our study likely due to the prevalence of cultivated flowering plants in these urban parks (e.g. *Cassia fistula*, *Bauhinia blakeana*), which can support resident butterfly species adapted to an open canopy (e.g. *Catopsilia pomona*), as well as species from adjacent forests that forage in these parks (e.g. *Euploea phaenareta*). Forest reserves and urban parks adjoining forests collectively accounted for 91% of all butterfly species recorded in this study. Due to their small areas and impoverished floras, forest fragments and isolated urban parks recorded the lowest butterfly diversities among the habitats in Singapore.

Species responses to environmental factors

Changes in canopy cover and light intensity can affect the richness and composition of tropical forest butterflies (Hill *et al.* 2001; Laurance *et al.* 2002; Hamer *et al.* 2003) both directly through microclimatic effects (e.g. moisture

availability) on butterfly survival and indirectly by affecting the productivity and quality of larval host plants (Blau 1980; Basset *et al*. 2001). My results suggest that butterfly species responded individualistically to environmental factors (e.g. light intensity) that affected their distribution across the habitats.

Species richness within urban parks

Koh *et al*. (2004) recently reported the coextinctions of butterflies and their host plants from Singapore, and predicted that the number of extinct butterflies would increase exponentially with that of extinct host plants. Here, my results suggest that the reverse was also true, whereby the number of butterfly species persisting in urban parks was dependent on the number of potential host plants occurring in them. The proximate mechanism underlying butterfly–host plant specificity is primarily chemical in nature (Ehrlich & Raven 1964), although their evolutionary and ecological bases are less well understood (see Gilbert 1984). The isolation of parks from potential sources of butterfly populations in forests within two kilometres was also important in determining butterfly-species richness in urban parks. This is consistent with my earlier findings indicating that urban parks adjoining forests had higher butterfly richness than isolated parks (Fig. 7.2).

Conservation implications and summary

In this study, forest reserves recorded the highest butterfly richness among the different habitats in Singapore (Fig. 7.2), which suggests that in highly urbanized tropical landscapes, the least human-disturbed habitats are most valuable for preserving the native butterfly richness, and should therefore be given the highest conservation priority. Because larval resource availability and isolation from forests were important determinants of butterfly richness in urban parks, urban parks should be revegetated with a diversity of potential larval host plants and should be situated as near as possible to a forest, in order to maximize their conservation value. The individualistic responses of butterfly species to environmental factors (e.g. canopy cover) highlight the importance of maintaining environmental heterogeneity for the effective conservation of different butterfly species (e.g. specialist species that are dependent on a closed canopy forest) (Hamer *et al*. 2003).

Although urban landscapes represent the worst-case scenario in ecosystem management (Hunter 1996; McIntyre & Hobbs 1999; Miller & Hobbs 2002), we are increasingly faced with the task of conserving species in such ‘unnatural’ human-dominated environments. Therefore, it is crucial that more research be

focused on developing viable strategies for designing protected areas in urban landscapes in the tropics.

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8

Biodiversity conservation and indigenous peoples in Indonesia: the Krui people in southern Sumatra as a case study

AHMAD KUSWORO AND ROBERT J. LEE

Introduction

In recent decades, there has been an ongoing debate (cf. White & Martin 2002; Molnar *et al.* 2004) about indigenous peoples' responsibilities as stewards of natural resources (i.e. that they hold locally based knowledge, which enables them to sustainably use their natural resources, and the cultural practices to enact this knowledge into tractable actions). However, indigenous peoples are also blamed for wildlife and natural-resource exploitation (i.e. that they deplete local resources without regard for sustainability). These debates, while originating as academic discourse, have conservation-policy implications. If people concur that indigenous peoples are responsible stewards of natural resources by using local knowledge, they should be given special consideration for maintaining their traditions, even in areas that are inaccessible to other groups. If otherwise, they should be held accountable to the laws by which everyone must abide. Today, indigenous rights and local knowledge are used as political and conservation platforms whereby conservation groups and local communities lobby for land and natural-resource use rights by indigenous peoples. Other groups in opposition to this view have argued that indigenous peoples regularly violate conservation laws, and lead to the depletion of resources.

We feel that neither view is completely true, and these arguments have been oversimplified; indigenous peoples' uses of natural resources covers the entire

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spectrum, from full exploitation without recourse to stewardship based on cultural knowledge and integrity. Viewing indigenous peoples as inherently wise in natural-resource management or conservation is problematic. First, 'indigenous peoples' is a construct that social scientists have affixed to a particular culture or people, and implies that ethnic groups are native to the area when, in fact, many 'indigenous peoples' are recent migrants to the area. Second, indigenous peoples are seen in isolation from outside political, social and environmental influences. Marginalization of these communities is examined isolated from the process of political changes and global market dynamics; in reality it is embedded in the process (Tsing 1993). Furthermore, migration and immigration, processes that change cultural identities, are rarely considered a factor. For example, indigenous peoples that are assumed to have local knowledge can be recent migrants into the area, and therefore, may have no more local knowledge than any other group. In addition, indigenous peoples are often mistakenly viewed as having limited material desires (i.e. subsistence orientation, Walker 2001) and no inherent need for development products. Finally, in advocating rights of indigenous people, emphasis is often on the struggle between indigenous people and the state rather than between citizen or civil society and the state (Li 1999), ignoring the roles played by non-indigenous groups.

On the other hand, seeing indigenous peoples' uses of natural resources as destructive via a Malthusian argument (i.e. as populations grow in size, they will more than likely deplete their local resources) has its own set of problems. First, human beings are adaptable, and can change their behaviour in response to existing or potential problems. Second, a number of ethnic groups throughout the world have sustainably maintained their way of living, conserving their natural resources while increasing their numbers (cf. Molnar *et al*. 2004). Third, there should be careful consideration of laws and regulations that diminish a group's ability to make a sustainable living. In other words, if an ethnic group can demonstrate that their way of living can sustain local natural resources, authorities ought not to impose extraneous laws.

This debate is highly relevant in Indonesia, where a number of ethnicities represented by more than 500 languages and dialects exist. At the core of this debate is the question: how are traditional indigenous communities affected by changing political, economic and social currents? Certainly, no group, indigenous or non-indigenous is impervious to these forces. Indonesia went through significant changes in its economy under the New Order of President Suharto when modern technologies for extraction industries (e.g. mining, oil, timber) and increasing connections to the global markets were improved. The economic transformation had a tremendous impact on local markets of a majority of Indonesians who lived in rural areas.

Perhaps even more important were the massive migrations seen during the past three decades across Indonesia, where over 240 million people are distributed across more than 17500 islands. Despite Indonesia having 500 languages and dialects, Indonesians of different ethnic backgrounds have always intermingled. Emigration by Javanese and Balinese increased by 73% from 1971 to 1980 through both government-sponsored transmigration projects and simply as a course of overpopulation self-regulation. Some 6% of the population of other islands was Javanese by 1980. From 1969 to 1989, some 730000 families relocated from the overpopulated islands of Java, Bali and Madura to less-populated islands in the government transmigration programme. Nearly half of the people involved in the government-sponsored transmigration programme went to Sumatra, particularly its southern provinces including Lampung and Bengkulu. In addition, Indonesians were also engaging in what demographers call 'circular migration' and other kinds of movement due to greater access to public transportation. People were able to seek work in other parts of the country and still remain in periodic contact with their family and former community. We argue that there were three main ways that changing socio-political and market patterns changed natural-resource use by indigenous peoples in Indonesia. First, local knowledge and cultures had to adapt to modern market patterns for traditional communities to compete in the marketplace. Second, increased emigration of indigenous peoples coupled with inundation of outside people, namely Javanese and Balinese, led to changes of local traditions and adoption of outside cultural influences. Third, a concerted economic centralization policy of the Suharto government often conflicted with local traditions and led to protracted disagreements between traditional communities and the government.

In this chapter, we present and discuss a case study from a community in southern Sumatra to demonstrate the complexity of the issue of duality of indigenous peoples' role in wildlife and natural resources conservation (i.e. to what extent they conserve or do not conserve natural resources).

The Krui people in southern Sumatra, Indonesia: biodiversity conserved and biodiversity lost

Krui is located in Lampung Province (3° 45′ S and 103° 40′ E – 105° 50′ E) of southern Sumatra. This part of Sumatra was first called 'Lamphung' by ancient Chinese travellers, meaning, 'a place of southerly winds'. Covering an area of approximately 35376 km^2, this province is bordered with Sumatra Selatan and Bengkulu Provinces in the north, the Sunda Strait in the south, the Java Sea in the east and the Indian Ocean in the west. The province contains the third

largest national park in Sumatra, which has high biological diversity and contains key wildlife species such as the Sumatran tiger (*Panthera tigris*), Sumatran rhino (*Dicerorhinus sumatrensis*), Sumatran elephant (*Elephas maximus sumatranus*) and lesser apes (*Hylobates* spp.).

The Krui people live among traditional communities in Lampung. Like other traditional communities in Lampung, the Krui people are characterized by mixed ethnicities between indigenous groups and immigrants. In general, indigenous people of Lampung consist of coastline ethnic groups (Peminggir, including Krui, Ranau Komering and Kayu Agung) and interior ethnic groups (Pepadun, including Suku Abung, Pubian, Manggala/Tulang Bawang and Buay Lima). The common local language is Lampungese and has two dialects, the coastline dialect (Peminggir) and the interior dialect (Abung). Most people in the region rely on agriculture as their primary livelihood, planting cash crops such as coffee and rice supplemented by other crops such as corn, coconuts and cocoa.

Damar gardens

Damar (*Shorea javanica*) gardening as an agricultural system appears to have origins in the early twentieth century (Michon *et al.* 2000b). Whereas people tapped resin from trees in natural forests, with increased market demand, people began to plant damar trees to capitalize on this economic opportunity. A damar agroforest goes through several stages, and can take up to 30 years to reach maturity. The Krui people tend damar gardens, tapping trees for resin (*getah damar*), which is used for incense, paint, ink and varnish. At the regional level, the damar resin has been the backbone of the Krui region economy, with 50000 ha of productive damar gardens and approximately 10000 tonnes of resin produced annually (Michon *et al.* 2000b:180).

Indonesia is the only damar-producing country and the main area of production is the Krui region of Sumatra. Low-quality resin is sold domestically in small markets, while the best is exported (as incense or a base for paint, ink and varnish) to industrial countries via Singapore (Michon *et al.* 2000b:176). The comparative economic profitability of damar gardens for household economies has been well described (Michon *et al.* 2000a:174) and is 'one of the most profitable smallholder systems in Sumatra'. Harvested regularly, the damar tree produces resin that provides a steady income source. The garden also provides other valuable resources such as firewood, timber, fruits and vegetables, for domestic or commercial use. Damar gardening is based on traditional laws associated with land ownership. Owning a damar garden bestows high status in the village. According to tradition, parents pass down land and property

(e.g. houses, rice fields, damar gardens) to the eldest son. In return, the eldest son provides care for his parents and unmarried siblings. Inheriting no property from parents, younger sons wanting to create their own families are expected to find land to establish damar gardens.

Biodiversity conserved

The *adat* (tradition) communities in Krui have a farming system that is purported to be sustainable. The *adat* communities in the Krui coast have received recognition from the government as well as the scientific community for their success in managing land and forest resources. In 1997, 16 *marga* (clans) in Pesisir Krui received the Kalpataru Award for the category of 'environment saviours' (*penyelamat lingkungan*), given by the President of Indonesia. This symbolizes government recognition to Krui communities for creating wide and expanding forest-like gardens without external assistance. For Zerner (2000:14) the Krui community management system is an excellent example of community-based natural-resource management system that results in positive social and environmental consequences. Michon *et al.* (2000a:160), whose writing is referred to by Zerner (2000), go on further to elevate the value of the system of resource management developed by Krui people as '… alternative successful forest management strategies developed by local communities …'. The damar gardens, thus, have been touted as being economically and ecologically sustainable, maintaining local traditions and increasing ecological functionality by increasing biodiversity and maintaining key wildlife species.

According to Michon *et al.* (2000a), based on the results of long-term field research, the damar agroforests that the Krui people maintain conserve valuable natural forest diversity and effectively function as a buffer zone for Bukit Barisan Selatan National Park. The results of their research (Michon *et al.* 2000a, b) can be summarized as follows. Damar gardens appear to conserve greater biological diversity compared to other common types of agriculture. Damar gardens house a moderate variety of native plant species, with nearly 40 species of trees dominating the gardens. This diversity comprises over 600 individual trees of ten centimetres or larger in diameter (at breast height), with up to 65% damar trees 20–25% fruit trees and 10–15% other wild trees. Non-tree plant species in gardens are similar to natural forests. The damar garden also functions as habitat for animals; 60% of bird species found in adjacent natural forests can be found in gardens, and key wildlife species such as lesser apes, rhinos, tigers and elephants occupy damar gardens. The damar agroforests are an effective buffer zone for the adjacent Bukit Barisan Selatan National Park, providing many forest resources for the local community (e.g. timber, wood and

non-timber forest products) thereby reducing the need to exploit resources inside the park.

Damar gardening in a historic and economic context

The Krui coast has always been a trading post for southern Sumatra by colonial powers – first the British until the mid 1920s, followed by the Dutch. The Krui people originally occupied the central coast. In this central coast, around the town of Krui, the damar agroforest was at maximum production, with damar trees at canopy or sub-canopy height providing damar resin, and no new damar garden establishment in the area. As the Krui port grew in size and domestic and international demand for agricultural crops grew, the Krui people settled in other rural areas in order to plant cash crops including damar. Further to the north and to the south the establishment of the agroforest was underway. Historically, this variation is linked to the settlement history and regional development of the Krui coast (see below).

Commerce of cash crops, including damar resin, increased dramatically during this period. Up to this point, most of the damar resin was collected from the nearby forest areas. However, with increased demand for damar resin, people began to plant more damar trees using adjacent areas for planting rice and other agricultural products, expanding damar areas to the north and south. In this expansion, the Krui people entered into agreements with government to take over lands in exchange for cash or in-kind payments. This has led to forest lost, illustrated further below.

Forest lost

Michon *et al*. reported the encroachment of the present Bukit Barisan Selatan National Park (BBSNP) in the central area of Krui coast (2000a:194):

> As a result of land shortages in several villages, encroachment of *ladang* and damar gardens in the forest reserve, especially along the Krui-Liwa road, started as early as 1955. In the late 1960s, a tacit agreement was concluded between farmers and the forestry authorities, allowing several dozens of families to open land in the reserve and establish damar gardens … But police and conservation guards continued to regularly visit the farmers to receive a 'reward' for this agreement. This continued annoyance led many families to leave the area at the end of the 1970s. Today, in the park where no *ladangs* have been opened for more than twenty years, the canopy has closed and only the expert eye will distinguish the damar island in the forest.

The recent encroachment follows a similar pattern. In 1997, over 500 people from villages near Krui town settled on national park land. In Arta Jaya (not its real name) they cleared over 2000 hectares of the park's forest, and began intensively establishing coffee smallholder and pepper gardens. Displaced settlers came from villages with very high population density (100 persons/km^2). In these villages, all the land has been transformed into irrigated settlements, rice fields and damar gardens. Therefore, there was no more land to develop. The only way for the villagers to obtain land for damar garden expansion was by settling into areas north and south.

Perhaps one of the most important factors that contributed to accelerated deforestation in the past two decades in southern Sumatra was an increase in agricultural exports, namely coffee (O'Brien & Kinnaird 2003) and pepper. Deforestation rates inside the national park appear to be strongly related to the price of coffee paid to farmers, which has steadily increased, mostly in relation to the monetary crisis and run-away inflation in 1997–1998.

Furthermore, conversion of the national park's forest in Arta Jaya was carried out with tacit agreement with local forestry officials. The village head and other village representatives, in order to increase village revenues through land tax to develop community facilities such as schools and clinics, attract other settlers to the village, where they pay for the opportunity to deforest the national park. This has led to further expansion into park lands.

The response by local heads of the forestry authorities has been to deny any systemic corruption within their office, and to state that acts of corruption are carried out by undisciplined officers. The forestry authorities have significant challenges in protecting park lands: staff numbers are low; guards are poorly equipped and paid, making bribery an attractive income supplement; guards face violent threats by settlers; the military and police are centrally involved in large-scale deforestation; and guards are required to provide periodic 'fees' to their superiors, or face transfers to less attractive posts.

Opinions of whether settlement into park lands is justified have been mixed among the Krui people. Elders in villages near Krui town, where forest settlers come from, generally agreed that fellow villagers should not have cleared national park forest because these were clearly illegal acts. They also pointed out that there were lands available to the north and south that were not part of the national park. On the other hand, other Krui people felt that encroachment into park lands was justified because state lands in southern Sumatra had been utilized in this way since the early New Order years in the 1970s, mostly by Javanese and Balinese. The Krui people felt that they had more right to state lands in southern Sumatra and that they could better manage the land under the damar system than the Javanese and Balinese under their own farming systems.

The Bukit Barisan Selatan landscape has undergone massive deforestation in recent decades. Between 1972 and 2004, the Bukit Barisan Selatan landscape lost nearly 340000 hectares of forest, of which 52000 hectares were located inside the national park (Anon. 2004). Although the pace of expansion along the Krui coast is relatively lower than other state forest zones in the province, local people and migrants convert the land into smallholder fields leaving only patches of natural forest. This has given rise to a serious issue related to national park integrity and local resource management. At the present rate, 4.8 hectares of natural forest disappear every day (145 hectares/month) along 1700 km of active forest encroachment throughout the park. This forest encroachment has not only led to deforestation but has also increased access to forests, increasing road establishment, poaching pressures, wildlife loss and forest fires (O'Brien *et al.* 2003; Anon. 2004).

The Krui people were active participants in deforestation in southern Sumatra, brought about by: overpopulation and lack of land; increasing market prices for agricultural exports; high price of available legal private land and low price for illegal state land; political changes that encouraged acts that defied government; and a market system that is largely based on corruption. Given the right conditions, the Krui people could have exercised traditional farming methods and avoided massive deforestation.

Conservation for and by whom, and for what?

The primary question that the editors of this volume posed was: conservation for and by whom? There is an additional, even more basic, question we might ask: conservation for what? In other words, what is the basic aim of biodiversity conservation? While the answer appears to be simple, many of today's practitioners of conservation appear to have trouble answering this question or at least have a difficult time giving a straight answer to those who question the need for conservation.

The main aim of biodiversity conservation is to maintain and even increase the level of biological diversity that exists. The approach has been to assign legal protection status to threatened species and certain areas that are deemed to have significant conservation value. Yet, conservation has had many failures. Among the failures that community rights advocates have pointed out are the failures to involve or accommodate local communities, particularly traditional communities, in conservation plans. They argue for greater dialogue between government and traditional communities that lead to collaborative management or co-management of protected areas by local communities. The benefits resulting from this, greater participation and economic prosperity by local

communities, and the freedom to manage their own natural resources being the most important.

However, failure to enable dialogue and cooperation is a failure only if it has not conserved wildlife and wild lands, and it is not clear if greater dialogue and cooperation with traditional communities will lead to biological conservation success. Attaching the term *adat* to a community does not necessarily mean that they are always living in harmony with nature. Furthermore, greater economic gains, even by traditional communities, often fuel greater resource use leading to serious resource depletion (Holt 2005).

Past conservation failures have shown that the government must have help from outside groups to manage protected areas (cf. IIED 1994). Yet, in light of evidence from the Krui case in which a traditional community contributes to conservation as well as to loss of biodiversity, obligating government to relinquish authority to local communities alone would not solve conservation problems and could even encourage further problems. Where appropriate, government should hold open discussions with local communities and other stakeholders to determine roles and responsibilities, design management schemes that can accommodate community needs, and agreements that can be upheld by all stakeholders. Whatever the management framework, from the perspective of biodiversity conservation, the overriding determinant to roles and responsibilities, management schemes and agreements is whether biological diversity is being conserved or not.

Summary and conclusion

This chapter explores the sociopolitical and economic context of natural-resource and land use of the Krui people in southern Sumatra. We show that the Krui people have knowledge about using natural resources in a sustainable way, but their decisions depend on emerging economic and sociopolitical forces. The Krui people are able to maintain agroforests that helped to preserve some biological diversity, but they also cleared the national park forests in southern Sumatra. Factors that determined their natural-resource use included: overpopulation and lack of land; increasing market prices for agricultural exports; competition with migrants for available land; high prices of available legal private land and low prices for illegal state land; political changes that encouraged illegal acts that defied government; and a market system that is largely based on corruption. What we see through the Krui people is that traditional communities are neither inherently wise nor blatantly destructive. Whether they conserve or deplete natural resources depends on economic and sociopolitical forces. Traditional communities will adapt to changing economic

and sociopolitical forces. Based on this pattern, conservationists including scientists, governments and NGOs, should work inclusively, cooperatively and transparently with communities to cope with economic and sociopolitical forces that hinder the continuation of cultural traditions that conserve natural resources.

Categorization of indigenous peoples as either destroyers of environment or environmental stewards, a priori, is naïve. We suggest that scholars, conservationists and decision-makers take a more balanced approach by forming policies and making decisions based not only on inherent rights but also on the existing social, political and ecological feasibility. We all hope that human-rights advocates and conservationists can agree to work together and agree on certain issues. They, however, do not share a common goal. Given the choice between community rights and conservation, most community rights advocates would choose the former while conservationists would choose the latter. In this book, there are chapters that criticize current protected areas and suggest traditionally managed areas in their stead. This noble idea alone won't guarantee real conservation improvements. From the perspective of biodiversity conservation, the goal that should be shared by all of us is the conservation of the life-support systems that natural ecosystems provide. All stakeholders need to realize a balance and make concessions and compromises in putting biodiversity conservation as the ultimate goal and measure of success.

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9

Involving resource users in the regulation of access to resources for the protection of ecosystem services provided by protected areas in Indonesia

ABDUL HALIM, TRI SOEKIRMAN AND WIDODO RAMONO

Introduction

Natural resources have a limited capacity to sustain use and therefore use needs to be managed (and often restricted) to sustain ecosystem services (e.g. extractive use, tourism, flood control, shoreline protection, etc.). Protected-area management is one management tool that may be applied to manage use. Protected-area management differs from other types of resource-use management, such as catch quota or prohibited fishing gears, in the sense that regulations on use differ between zones within the protected area, and between the protected areas on the one hand and the surrounding area on the other hand.

Deciding on who should have access to resources, and how to regulate access is the core of protected-area management. In this chapter, we show how The Nature Conservancy (TNC), an international organization working in Indonesia, works together with government agencies, NGOs and local communities to manage use in some of the most biodiverse areas on Earth.

As its core approach to conservation, TNC adopted 'conservation by design' (The Nature Conservancy 2001), which is in essence a project-management cycle comprising setting priorities, developing strategies, taking action and measuring

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performance or management impact. The two spatial levels at which this approach is applied are the ecoregion and the site. At the ecoregional level, conservation by design mostly considers spatial patterns in nature at a scale of hundreds to thousands of kilometres to decide where conservation action is needed (Groves *et al*. 2002). Ecoregions are understood by TNC as large (hundreds of kilometres across), contiguous units of land and water defined by ecological boundaries. Sites within these units share characteristics in climate, vegetation, soil, geology, topography, oceanography and biogeography. Ecoregional Conservation Assessment (Ecoregional Conservation Assessment) is a systematic, comprehensive analysis of patterns in nature, resulting in a portfolio of sites within and across ecoregions that represent the full distribution and diversity of native species, natural communities and ecological systems. Ecoregional Conservation Assessment addresses viability of conservation features (species or natural communities) by determining how much or how many of each feature needs to be preserved to ensure its survival in perpetuity. The outcomes of the viability analysis are used to set explicit conservation goals in terms of areas where conservation management is required to meet the goals. After one or more sites from the portfolio are selected to implement conservation management, a planning process analogous to ecoregional planning is initiated. Whereas both ecoregional planning and site conservation planning address stakeholders and ecosystem services, stakeholder involvement is more pronounced in the latter process.

At site level, TNC adopted the 5-S strategy that provides a well-tested, science-based process for developing conservation strategies. The 5-S components include: (1) systems: key conservation targets (species, habitats and ecosystems) and ecological processes; (2) stresses: impacts or threats affecting the conservation targets or ecological processes; (3) sources of stress: causes or agents of stresses; (4) strategies, the full array of actions necessary to abate threats or enhance the viability of the conservation targets through rehabilitation; and (5) success measures: monitoring for assessing progress in abating threats and improving the ecological health of conservation targets in the conservation area (The Nature Conservancy 2001). The Nature Conservancy implements situation analysis of local socioeconomic conditions as part of its 5-S planning process.

In this chapter we describe how stakeholders were identified, how they were involved in conservation management, and how they are affected by proposed management measures in four Marine Protected Areas and one Terrestrial Protected Area in Indonesia. This paper focuses on fishery and tourism – fishery because it is the most pervasive threat (Burke *et al*. 2002), tourism because of its potential to generate funds for management.

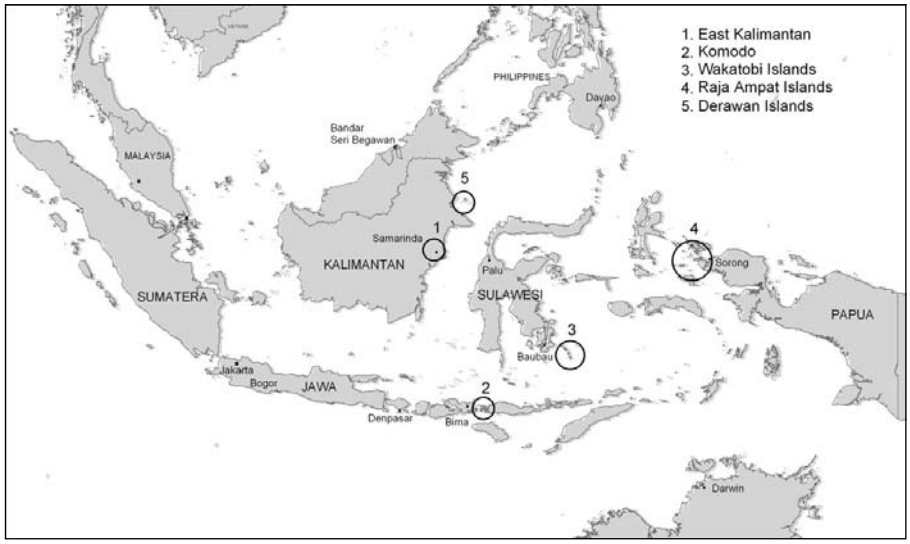

Figure 9.1. Sites where the Nature Conservancy implements conservation programmes.

Approach

Five protected areas in Indonesia comprising four marine sites and one terrestrial site were included in this study. Although not all sites are formally declared as protected areas, they still qualify as such following the definition of the International Union for the Conservation of Nature (IUCN): 'MPAs (Marine Protected Areas) are areas of tidal or subtidal terrain, together with its overlying waters and associated flora, fauna and historical and cultural features, which have been reserved by law or other effective means to protect part or all of the enclosed environment.'

The marine sites are Derawan Islands, Raja Ampat Islands, Wakatobi National Park and Komodo National Park. Raja Ampat is actually a large area where a network of sites is being developed. The terrestrial site is Segah, East Kalimantan Province. These study areas are depicted in Fig. 9.1.

Derawan

Situated in the global epicentre of coral-reef diversity, the reefs of the Derawan Islands are extremely diverse and unique because of the influence of the Berau River on the coastal waters. This area features green turtle nesting beaches that are among the most significant in Southeast Asia, unique saltwater lakes with endemic jellyfish species, and aggregation sites of manta rays. However, the marine resources of the Derawan Islands are presently

threatened by unsustainable fishing practices, notably fishing with explosives and poison, overfishing, and poaching of turtle eggs and adults. To protect these unique islands, TNC, World Wide Fund for Nature (WWF) and Mitra Pesisir (a United States Agency for International Development (USAID) project) are partnering together with provincial and district governments, national and local non-governmental organizations (NGOs), Yayasan Kehati (Keanekaragaman Hayati), Bestari and Kalbu, as well as communities, to establish a co-managed Marine Protected Area (MPA) that includes use zones and no-take zones. This conservation partnership helps build the capacity of local government and communities to effectively manage the protected area and the marine resources that coastal livelihoods depend upon.

Raja Ampat

The Raja Ampat Islands, encompassing over four million hectares of land and sea off the northwestern tip of Papua, forms the global epicentre of coral-reef diversity. This area is estimated to harbour over 75% of the world's known coral species. A total of 488 scleractinian corals were identified during TNC's Rapid Ecological Assessment in 2002, compared to that of known 445 species in North Sulawesi, 379 species in Milne Bay and 347 in Kimbe Bay, Papua New Guinea (PNG) (Donnelly *et al.* 2003). These areas are also harbouring one of the world's richest coral-reef fish faunas, consisting of at least 1074 species that was only surpassed by Milne Bay Province, PNG (1109 species) and Maumere Bay, Flores, Indonesia (1111 species) (Donnelly *et al.* 2003). Overall, reefs in Raja Ampat are in very good health. Reefs do not appear to be suffering from any recent serious detrimental bleaching events that caused extensive mortality to reefs in the region in 1998. However, blast- and poison-fishing as well as overexploitation of larger carnivores (sharks and groupers) are still common. In addition, unregulated access to resources by immigrants leaves residents feeling powerless and disenfranchised, encouraging them to take the resources that are still left. The Nature Conservancy started its field presence in the Raja Ampat Islands in 2003, based on an invitation letter from the head of Raja Ampat district to help with the district's marine-resources management.

Wakatobi

Wakatobi (an acronym for the four main islands of Wangi-Wangi, Kaledupa, Tomia and Binongko, also known as the Tukang Besi Islands) is an archipelago at the southeastern tip of the Indonesian island of Sulawesi. In terms of diversity of marine life, geographic scale and reef condition, it ranks as one of the highest priorities for marine conservation in Indonesia. It is also a

centrepiece for a network of mutually replenishing MPAs along the south-eastern coast of Sulawesi. Due to strong upwelling bringing cooler water from the Flores Sea in the south, Wakatobi is relatively protected from bleaching events that have affected many reefs throughout the world. Important threats to Wakatobi's reef communities and to the livelihood of people who depend on these reefs are destructive fishing and overfishing. In 1996, the government of Indonesia declared 1.39 million hectares in the islands and waters around them as a protected area. The aim is to protect coastal and marine ecosystems to ensure that these ecosystems can continue to provide services (fisheries, tourism, coastal protection, etc.). The Nature Conservancy and WWF Indonesia have been collaborating closely to assist the park authority to improve its management objectives. Close cooperation has been established with the national Directorate General of Forest Protection and Nature Conservation, the Department of Marine Affairs and Fisheries, Southeast Sulawesi Provincial government, government, local communities, NGOs and the private sector.

Komodo

Komodo National Park was declared in 1980 to conserve the unique Komodo dragon (*Varanus komodoensis*) and its habitat. It is located at the western tip of the Indonesian Island of Flores. In 1986, the park was also designated a World Heritage Site and a Man and Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The park encompasses nearly 200000 hectares of land and sea. The marine component of the park harbours one of the world's richest marine environments that includes more than 1000 species of fish, 260 species of reef-building corals and 70 species of sponges, as well as dolphins, whales, manta rays and sea turtle (Pet & Yeager 2000). In 1995, the Ministry of Forestry's Directorate General of Forest Protection and Nature Conservation invited TNC to assist its subsidiary, the Komodo National Park Authority, with conservation management of the park's coastal and marine ecosystems. Since that time, together with park authority and local communities, TNC has assisted to protect the park's diverse ecosystems from destructive fishing practices and overfishing, which have severely damaged the park's coral reefs and fish populations. The Komodo National Park project is TNC's longest running marine project in Indonesia. A number of onsite conservation lessons learned over the period 1996–2005 are currently being applied at other TNC marine sites including Derawan, Raja Ampat and Wakatobi. The successful abatement of blast-fishing inside the park, which resulted in a 60% increase in hard coral coverage, has become a textbook example of conservation success.

Segah

The Segah River is in East Kalimantan's Berau District and is home to some of Borneo's last remaining lowland forest. The forest in the upper reaches of the Segah River is largely intact.

Stakeholder identification

Stakeholders are: 'any group or individual who can affect or is affected by the achievement of the firm's objectives' (Mikalsen & Jentoft 2001). Whereas stakeholder involvement is essential for successful park management, not all stakeholders can or should be involved during all stages of planning and implementation. Therefore, TNC applies a ranking system for stakeholders where each group of stakeholders is involved in different ways.

Groups of stakeholders should be identified following their possession on three attributes, i.e. legitimacy, power and urgency towards resource management (Mikalsen & Jentoft 2001). Legitimacy means that a group poses a legal, moral or presumed claim over the resources. Power means that a group is in a position to influence the decision-making process. Urgency means that a group's claims demand immediate attention from managers. By scoring each of these attributes as high, medium or low, stakeholders can be ranked or categorized.

We distinguish the following groups of stakeholders: definitive, expectant and latent. The definitive category includes groups that score high for all three attributes. Expectant and latent categories include groups that score high for two attributes and for one attribute, respectively. Ideally, groups that belong to the definitive category will be more frequently involved in consultation throughout the life cycle of the stakeholder programme compared to expectant and latent. Furthermore, the manner in which stakeholders are involved must also differ between the three categories; latent stakeholders must generally be granted less opportunity to influence decision making than definitive stakeholders.

Stakeholder involvement

In this chapter, we restate the preferred level of involvement for each stakeholder group in a protected-area management planning process to their ranking against the conservation programme's life cycle that includes: goal and objective setting, management planning, management implementation, management consultation and monitoring (Francis *et al.* 2003; Table 9.1). Goal and objective setting refers to the conservation programme's goals and

Table 9.1 *Preferred level of involvement for each stakeholder against the conservation programme's life cycle*

	Goal and objective setting	Planning	Implementation	Consultation	Monitoring
Definitive	×	×	×	×	×
Expectant	×	×			×
Latent	×				×
Public	×				×

Note × = Stakeholder involvement.

objectives. Goals are set for longer time periods (e.g. 3–25 years) while objectives are developed for the shorter term (e.g. 1 year). Management planning aims to plan activities that contribute to achieving agreed-upon goals and objectives. Separate management plans for protected areas are actually developed for the short term (1 year), mid term (3–5 years) and long term (10–25 years).

Assessing limits of acceptable change

Whereas TNC aims to reach use of a protected area to a level that can be sustained, it has only just started to explore how use levels can be determined. For this purpose, TNC uses the concept of Limits of Acceptable Change (LAC). This is an extension of the carrying-capacity concept that provides ways of predicting and preventing adverse environmental change by human activities (Singleton & McDonough 2002).

Use right allocation schemes

The Nature Conservancy considers various mechanisms to allocate use rights to stakeholders. These include: zoning systems, licensing systems with restricted availability, licensing systems with unrestricted availability and quota systems. In zoning systems, certain areas of waters are purposively delineated and designated to maintain the ecosystem and allocate use rights. This could include: (1) areas designated for no-take to protect vulnerable ecosystems and maintain their functions to provide services for fisheries and tourism; and (2) areas designated for various uses to allow stakeholders to use resources following the regulations at each zone.

Licensing systems with restricted availability means that the number of available licences is restricted according to a use level corresponding to limits of acceptable change. Licensing systems with unrestricted availability means that

Table 9.2 *Stakeholder groups for marine resources in Derawan Islands in 2005*

Stakeholder group	Legitimacy	Power	Urgency
Definitive			
District government and its subordinates (subdistricts, villages, kampongs and implementing agencies)	High	High	High
Steering Team for Coastal and Marine Management of Berau District	High	High	High
Fishermen	High	Increasing	High
Owner of turtle concession[a]	High	High	Medium
Expectant			
Enforcement agencies	High	High	Low
District parliament (DPRD)	High	High	Low
Environmental NGOs	High	Medium	Medium
Local communities	High	Medium	Medium
Youth group	High	Medium	Medium
East Kalimantan Provincial government	High	Medium	Low
Tourism industry	High	Low	Medium
Fishing industry	High	Low	Medium
Future generations	High	Low	Low
Latent			
Academia	Medium	Low	Low
School teachers	Low	Low	Low
Media	Low	Low	Low

[a] Even though turtles are protected in Indonesia, the District government has issued a licence for collection of eggs.

the number of licences is not restricted; as long as specified criteria are met, a candidate can obtain a licence. Another commonly used allocation scheme, the quota, is not considered by TNC for reasons explained in the discussion.

Discussion

Stakeholder identification

In 2005, identified groups of stakeholders were ranked in terms of legitimacy, power and urgency for each of the areas: Derawan Islands, Raja Ampat Islands, Wakatobi National Park and Komodo National Park, and Upper Segah River of East Kalimantan (Tables 9.2–9.6). These ranks are based on the perception of field staff of TNC and implementing partners who have been working in the areas for at least two to three years.

Table 9.3 *Stakeholder groups for marine resources in the Raja Ampat Islands in 2005*

Stakeholder group	Legitimacy	Power	Urgency
Definitive			
District government and its subordinates (subdistricts, villages, kampongs and implementing agencies)	High	High	High
Local Nature Resource Conservation Agency (BKSDA) Papua II	High	High	High
Fishing industry	High	Increasing	Increasing
Expectant			
Enforcement agencies	High	High	Low
Local parliament (DPRD)	High	High	Low
Fishermen	High	Low	High
Tourism industry	High	Increasing	Medium
Ma'ya and Bethew communities	High	Medium	Medium
Environmental NGOs	High	Medium	Medium
Local community (other than Ma'ya and Bethew)	High	Low	Increasing
Regional Traditional Council of Sorong and Ma'ya Clan of Raja Ampat Islands	High	Medium	Low
Latent			
Future generations	High	Low	Low
Adat Councils at village level	Medium	Increasing	Low
Academia	Medium	Increasing	Low
Media	Medium	Increasing	Low
School teachers	Low	Low	Low
Papua Barat Provincial government	Low	Low	Low

Stakeholder involvement

To implement stakeholder involvement for protected-area management, TNC works towards the following management structure:

1. a collaborative management board for daily management that consists of the definitive stakeholders
2. an advisory committee that consists of definitive and expectant stakeholders
3. a consultative committee that consists of definitive, expectant and latent stakeholders
4. consultation sessions where definitive, expectant, latent and public stakeholders are involved.

Table 9.4 *Stakeholder groups for marine resources in Wakatobi National Park in 2005*

Stakeholder group	Legitimacy	Power	Urgency
Definitive			
District government and its subordinates (subdistricts, villages, kampongs and implementing agencies)	High	High	High
Wakatobi National Park Authority	High	High	High
District representative (DPRD)	High	High	High
Wanci/Kaledupa/Tomia/Binongko fishers	High	Increasing	High
Expectant			
Enforcement agencies	High	High	Low
Bajau fishers	High	Low	High
Local community members who are not involved in the fishing industry	High	Medium	Medium
Tourism industry/operator	High	Low	Medium
Environmental non-government organizations	Medium	Medium	High
Fish traders	Medium	Medium	Medium
Latent			
Future generations	High	Low	Low
Southeast Sulawesi Provincial government	Medium	Medium	Low
Academia	Medium	Low	Low
Media	Low	Medium	Medium
School teachers	Low	Low	Low

Combined with assessment of natural-resource status, resource-use patterns and perceptions on management, this will all provide input to inform adaptive management.

The Nature Conservancy's approach to stakeholder involvement follows a common approach for all sites, but the design of stakeholder-involvement strategies differs at each site depending on the local condition and dynamics. The common ultimate goal for stakeholders' involvement is to facilitate the establishment of collaborative management at all the study sites. For national parks where clear management frameworks are in place stakeholders' involvement is limited. The Nature Conservancy's work in national parks is geared towards making management more inclusive. In other non-protected conservation areas, such as Raja Ampat, Derawan and Segah, there is a very strong need for strengthening the management framework and institutionalizing. Here, TNC tends to work with stakeholders in order to strengthen the management framework.

Table 9.5 *Stakeholder groups for marine resource in Komodo National Park in 2005*

Stakeholder group	Legitimacy	Power	Urgency
Definitive			
District government and its subordinates (subdistrict, villages, kampongs and implementing agencies)	High	High	High
Komodo National Park Authority	High	High	High
Enforcement agencies	High	High	High
Expectant			
Traditional community leaders	Medium	High	High
Mass media	Medium	High	High
Island fish traders	Low	High	High
Local parliament (DPRD)	High	Medium	Medium
Environmental NGOs	Medium	High	Medium
Tourism industry	Low	Medium	High
Religious leaders	High	Medium	Medium
Island school teachers	Medium	High	Medium
Latent			
Fishing industry	Low	Low	Medium
Conservation cadres	Medium	Medium	Low
Fishermen organization (HNSI)	High	Low	Low
Recreational/sport fishers	Low	Low	Medium

The Derawan Islands is under the jurisdiction of Berau District. Recently, a Steering Team for Coastal and Marine Management of Berau District was established through a decree from the head of Berau Regency (Decree No. 225, 2004). The members of this committee represent government agencies and NGOs. This committee is mandated among others to facilitate the establishment of a joint committee that will coordinate and implement coastal- and marine-management initiatives at the district level.

The process towards establishing a Marine Protected Area in the Derawan Islands, Berau District, started in 1998 and over the years various meetings, discussions, workshops and training have been conducted together with key stakeholders. As in Raja Ampat, TNC's conservation efforts in the Derawan Islands are still relatively new. In 2003, a collaborative initiative involving six organizations was formed between Yayasan Kehati, Yayasan Kalbu, Yayasan Bestari, TNC, WWF Indonesia and the United States Agency for International Development's (USAID's) Coastal Resources Management Program II (CRMP-II) towards establishing a multiuse Marine Protected Area. These six organizations, called Joint Secretariat for Berau Marine (*Sekber Kelautan Berau*), have also signed

Table 9.6 *Stakeholder groups for terrestrial resources in the upper Segah River in 2005*

Stakeholder group	Legitimacy	Power	Urgency
Definitive			
Traditional community leaders	High	High	High
Logging company	Medium	High	High
Segah Management Council	Medium	High	High
Ga'ai and Punan Dayak communities	High	Medium	Medium
Expectant			
District government's office of the Bupati and Forestry Department	High	High	Low
Environmental non-government organization	Medium	Low	High
Province government's forestry department	Medium	Low	Low
Future generations	High	Low	Low
Latent			
Academia	Medium	Increasing	Low
Media	Medium	Increasing	Low
School teachers	Low	Low	Low

a Memorandum of Understanding with the Berau District government in the development and management of the Berau MPA. Consequently, a workshop on initiating the Berau MPA together with the various district government offices, law enforcement agencies and representatives from the various islands of Derawan, and a joint vision was drawn up and agreed upon.

The Raja Ampat Islands has a unique set of stakeholder. The roles of traditional councils (*lembaga adat*) are important to facilitate the participation of local communities in conservation programmes. Together with traditional leaders and local government agencies, TNC and partners have signed a joint commitment to preserve the environment of Raja Ampat in April 2004. This commitment is a first step towards involving the stakeholders in marine conservation programmes in the future.

A Stakeholders' Forum (*Forum Bersama Membangun Raja Ampat*) for Raja Ampat was launched in January 2005. Currently, TNC is working with local partners to develop the organizational structures needed for this forum. The members will have representation of: community leaders, the local planning bureau, the local Marine Affairs and Fisheries agency, the local Tourism agency, police, army, navy, university and NGOs. The roles of this forum are: (1) to propose conservation priority plans and actions to the local government, and (2) to serve as a medium for stakeholders to provide inputs for resource use programmes in Raja Ampat and West Papua Province.

In Raja Ampat, although still in its infancy, TNC has involved local stakeholders at its various programme development stages. Starting in 2003, we have established a close working relationship with indigenous people of Raja Ampat through their traditional (*adat*) councils at the Sorong District level as well as those that represent the Ma'ya people of Raja Ampat. A number of stakeholders' meetings were held, one of which was held in Tomolol, Southeast Misool in December 2003. At this meeting participants agreed on the 'Tomolol Declaration', which calls for the establishment of a stakeholders' forum. After a consultation process of more than one year, the *Forum Bersama Membangun Raja Ampat* (stakeholders' forum for the development of Raja Ampat) was established, as a communications, analysis and coordination vehicle to provide stakeholders' input to the Raja Ampat District government on conservation and development issues. The Nature Conservancy has recently established its first field office located in the village of Deer, Kofiau, which will provide better and closer communications and working relationships with the resource users in that area.

The Wakatobi Stakeholders' Consultative Forum was established in December 2004 to facilitate discussions and accommodate any management issues pertaining to the natural-resource management of Wakatobi National Park. The members of the forum who will represent stakeholders are currently being identified. Later, this forum will function to channel inputs from stakeholders on matters pertaining to resources management to the park authority.

An independent expert panel for reviewing the management effectiveness of Wakatobi National Park (WNP) has been established through the decree of Director General of Forest Protection and Nature Conservation (DG PHKA) (no. 46/IV-KK/2005 dated 25 April 2005). This panel includes, besides experts, the following stakeholders: district government, local university and Forestry Department. The panel will provide recommendations to the Directorate General of Forest Protection and Nature Conservation pertaining to improving the park's management effectiveness. One of the important issues is a review of the current park boundary and the design of the park's zoning plan.

In Wakatobi, a collaborative management model is still in the making, whereby stakeholders' involvement in management of natural resources is fostered through meetings at village, sub-district and district levels. Since TNC established a field presence in 2003 to date, more than 320 meetings have been held, predominantly with resource users. At the district level meeting in December 2004, more than 125 participants from the various communities of Wakatobi District, NGOs, District Parliament and government agencies, agreed on three action items amongst which is to form the Stakeholders' Consultative Forum for Wakatobi, to serve as a consultative mechanism to provide input to

the park's management. In subsequent meetings, stakeholders have recommended that village representatives are involved in patrolling for protection of biodiversity inside the park. A mechanism for joint patrolling is currently being formulated and in general would involve the appointment by the village of two representatives, who will coordinate the initiative in their respective villages. They will take part by reporting sightings of illegal and/or destructive fishing, and may also participate with the patrol team currently consisting of Wakatobi National Park rangers and the police.

Komodo National Park zoning system is declared through a decree from the Director General of Forest Protection and Nature Conservation (no. 65/Kpts/DJ-V/2001, dated 30 May 2001). The zoning option is based on observed resource-use patterns and consultation with local fishers, but resource users have not been involved in the process of zoning development. The extension of the zoning system to communities in and around the park has recently intensified.

The Komodo National Park Authority generally encourages participation of stakeholders in park management and surveillance, but that participation is not formalized. A joint team comprising: park rangers, police, water police, navy and army is regularly patrolling the park. In addition, local community members are often requested to join patrols together with rangers. The park authority has established a cadre of community members who assist with awareness activities.

In Komodo, stakeholder consultations have been carried out since 1996. These consultations and participatory mapping informed the zoning of Komodo National Park, together with data on resource-use patterns as well as ecological criteria. A proposed collaborative management scheme that is being put in place has mechanisms for enhancing involvement of stakeholders in park management. The management authority will comprise the Komodo National Park Authority (BTNK) and PT Putri Naga Komodo, a joint venture between TNC and an Indonesian tourism company. The management authority is responsible for the daily operations and management of the Komodo National Park, whereby the overall authority for the Park is held by BTNK. The management authority is advised by an 11-member advisory group, the Collaborative Management Council, which is enacted by a formal decree from the Director General of Forest Protection and Nature Conservation (PHKA) of the Indonesian Ministry of Forestry. In turn, the management council receives input from a less structured group, the Community Consultative Council, which will comprise representatives from fisher groups, communities, NGOs, tourism industry, etc. The Community Consultative Council, which will be enacted by a Bupati (Regent or District Head) Decree,

will also have three representatives sitting in the Collaborative Management Council. To engage latent stakeholders and the general public, TNC has worked together with RARE, an international conservation organization, in developing and implementing a Pride Campaign, which is a campaign to raise the communities' awareness and pride of Komodo National Park as a World Heritage Site.

In 1990, a logging concession began operating in the Segah area. For the next ten years, the company provided a measure of compensation to the three villages inside the logging concession and two others nearby. In 2000, the villages were concerned about the impacts of logging on the forest they depend upon for their livelihood and communities felt they were not being paid enough by the company for compensation. Negotiations with the company broke down and the villagers blocked access to the area. For two years the standoff continued. The five villages were willing to let the company restart operations provided tree-cutting practices were more sensitive to community needs and provided that the communities received a larger share of the benefits. The Nature Conservancy was doing biodiversity surveys in the area during the conflict and was asked by the logging company and the villagers to act as a neutral third party for resolving the conflict. An agreement was reached in October 2003 and logging restarted. The terms of the agreement were formally signed by the villagers, TNC and the logging company in June 2004. To implement the agreement, a local NGO was formally established. The *Badan Pengelola Segah* (Segah Management Council), staffed by volunteers and employers, has a coordinating committee and a management committee in charge of day-to-day operations. Representatives from the five villages, the logging company and TNC are on the coordinating committee. The five villages each fund 5% of the annual costs for management, and the logging company funds the remaining 75%.

Assessing limits of acceptable change

A limit of acceptable-change assessment has not been conducted yet at all five protected areas. However, activities that lead to this assessment have been initiated in Komodo National Park. A scoping study on environmental impact and carrying-capacity assessment for tourism activity have been completed (Anon 1999). Also, a preparation study to assess limits of acceptable change for the implementation of a long-term management plan for Komodo National Park has been accomplished (Singleton & McDonough 2002). A more thorough follow-up study is planned for 2008. For other protected areas, current monitoring progress focusing on biological and social indicators will be useful

for future assessments on limits of acceptable change. Yet such assessments are not planned for the coming three years.

Use-right allocation schemes

A mechanism to allocate use rights for fisheries to local fishers in Komodo National Park is through the introduction of a traditional fishing-rights system. This system gives exclusive rights for inhabitants living inside and around KNP areas to sustainably exploit resources in traditional resource-use zones using permitted fishing gears (Pet & Yeager 2000). The head of Komodo National Park will issue and control the use rights in close coordination with formal village leaders. In addition, Komodo National Park features no-take zones that are necessary to replenish surrounding fishing grounds. For other protected area sites, in general no-take areas will become a robust mechanism for resource-allocation schemes. Quota systems are not recommended for Indonesia, because of the multigears and multispecies characters of Indonesia's artisanal fisheries.

Summary

Allocation of scarce natural and renewable resources (fish, forest products, nature-based tourism, etc.) among users, within the constraints of the ecosystem's sustainable harvest level, is a major challenge for society. Progress towards a solution to the tragedy of the common problem, already identified over 2000 years ago by Aristotle in his 'Politics', has been slow, resulting in the degradation of ecosystems and the loss of services they provide. Also, in Indonesia, fishery and forest resources are degrading at an unprecedented rate, and access to what is left is contested between industrial and small-scale users, between long-term residents and recent immigrants, and between groups involved in partly incompatible types of resource use such as fishery and tourism. Solving these problems requires involvement of a mandated entity, with representation of the main stakeholders, which can make difficult decisions in the interests of the greater good. Such an entity will need to keep aggregated use at a level that the ecosystem can sustain, while putting mechanisms in place that ensure fair allocation among users. Site-based resource management, or protected-area management, is a valuable tool to achieve this. Socioeconomic expertise is urgently required for protected-area management planning, but this expertise can only be put to good use if ecological constraints and the limits to aggregated use are considered. In this chapter we describe our experiences with regulating use and allocating access

rights in one Terrestrial Protected Area and four Marine Protected Areas in Indonesia.

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10

Conclusion to Part I

NAVJOT S. SODHI

The chapters in this part show that protected areas in the Malay Archipelago may be severely threatened. Thus, protecting areas of global as well as regional significance is essential if we are to conserve biodiversity. Protected areas, for example, are crucial to bird species, and likely other taxa, of high-conservation concern, and should therefore remain one of the fundamental conservation strategies. Existing protected areas need to be better protected, and future protected areas should be carefully planned using both biological and sociological underpinnings. Challenges in the delineation and tangible management of protected areas can be best negated through a balance between biological and socioeconomic needs.

While current measures of protection may not be largely effective in most protected areas, understanding of effective strategies undoubtedly grows with conservation failures. Clearly, innovative new ideas and conservation tools are needed to both maintain existing protected areas and recruit new ones. Important considerations should be the expansion of current protected areas through restoration and reforestation, inclusion and education of local stakeholders about demarcation and conservation goals. Conservation attitudes of rural communities are generally positive. Negative conservation attitudes increase the intensity of resource harvesting in the protected areas. Therefore, fostering favourable support for conservation may help to alleviate at least some resource-harvesting pressures. More ecological and sociological studies are urgently needed so that tangible conservation actions and the improvement of conservation attitudes can be derived.

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Some rural communities may use natural resources in a sustainable way, but their decisions may be altered by emerging economic and sociopolitical forces. Thus, conservationists need to assist these communities to cope with economic and sociopolitical forces that hinder the continuation of cultural traditions that conserve natural resources. Allocation of scarce natural renewable resources, such as fish and forest products, among users remains a major challenge for society. Such resource uses sometimes may be incompatible, such as high fish extraction that may reduce ecotourism. Solving these problems requires the involvement of the main stakeholders. There is a need to keep aggregated use at a level that the ecosystem can sustain, while putting mechanisms in place that ensure fair allocation among users. Socioeconomic inputs are a must for protected-area management planning, but such can only be beneficial if ecological constraints are considered.

Conservation plans should work towards the cessation of unsustainable harvesting, and conserving biodiversity in all the existing ecosystems. Successful conservation plans need to be developed in consultation with various parties, from rural communities to senior government officials. Implementation of conservation plans would require rigorous conservation education and enforcement programmes, as well as the creation of important new protected areas. Factors contributing to successful implementation require field research and in-depth local knowledge; support by governmental decision makers and rural communities. Success of protected areas should be monitored through biological as well as social indicators. Ideally, conservation and human sustenance should be addressed in unison. It should also be realized that broad-brush solutions may not always work, and that each protected area should be treated as a unique scenario.

Part II CONSERVATION WITH AND AGAINST PEOPLE(S)

11

Introduction to Part II

MARIBETH ERB AND GREG ACCIAIOLI

All of the chapters in this part attempt to present the perspectives of local communities in the Malay Archipelago whose members have been confronted with a paradigm of conservation that is often alien to them. Unlike the other parts presenting views from conservation biologists and lawyers, this part presents the perspectives of mainly anthropologists, who have worked closely with local communities in an attempt to understand both their knowledge of their environment and the social institutions that form the framework of their practices in regard to it. While conservation biologists tend to look at the problem of conservation from the planetary perspective of maximizing biodiversity, including avoiding species extinction, and lawyers tend to look at the problems of the legal frameworks put in place to safeguard protected areas, hence often concentrating upon the national context of these laws (though in the context of global conventions and frameworks), anthropologists are concerned with the ecological and political-cultural consequences of the global and the national at the level of the local.

Some environmental ethicists and conservation biologists have recently advocated a return to a more exclusionary stand against local communities living in the vicinity of protected areas, what Wilshusen *et al.* (2002) refer to as a 'resurgent protection paradigm' (cf. Rolston 1996). In contrast, all of the chapters in this part call for more nuanced understandings of local situations that take into account the history of the peoples who live in or near protected areas, what their relationships with their environment have been, and the political

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and economic relations that have made their environments of interest to the global and national communities. All of these chapters in one way or another argue for the inclusion of local people in decision-making about protected areas and conservation agendas.

This part starts with a dialogue in Chapter 12 between two scholars, Suraya Afiff and Celia Lowe, from different regions of the world, the developing 'South' and the developed 'North'. They focus on the idea of 'collaboration', regarding national parks as a privileged space in which to think through this concept. The most common meaning of collaboration is associated with working together to produce something, but they point out that it also has a more sinister meaning, that is, helping an occupying enemy. Which of these meanings is the most common within collaborative projects in conservation? It is clear in some of the cases they discuss that transnational conservation agencies in concert with the national state governments with which they are working may be seen as occupying enemies demanding 'collaboration' from local peoples who have lost control over their resources due to the imposition of protected areas. This appears to be so in the case from which they start their discussion, the Komodo National Park in Eastern Indonesia, also discussed by Gustave and Borchers in Chapter 14. This case arguably illustrates the return to the strict enforcement paradigm of 'fortress' national parks (Siurua 2006) among international conservation organizations, especially given the implication of The Nature Conservancy (TNC) in the shootings of local fishermen who had entered into the boundaries of the national park. The case of Komodo National Park has also come to attention because it is an example of a 'collaborative management initiative' meant to include local communities and empower them. However, in the case of this park many locals in the community have rejected this collaborative initiative. In fact, the Komodo example at best exemplifies an attempt to involve local communities in passive participation in project implementation, rather than collaboration, which would require the involvement of local communities in the planning process for the park initiative itself. Often, Afiff and Lowe suggest, when communities agree with what has been 'socialized' to them, they are said to be 'participating'; but if they disagree, they are considered backward and unable to understand the necessity of conservation. As they note, such terms of participation may be tantamount to 'coercive conservation'.

These difficulties associated with 'participation' and 'collaboration' are explored more fully in Chapter 13 by Moira Moeliono, who contextualizes these issues within the framework of a changing political landscape in Indonesia. She examines the history of the various approaches to conservation policy in Indonesia, beginning with reserves established under the Dutch and moving through the authoritarian government of the New Order regime and on to the

more decentralized system that has evolved with regional autonomy reforms in the post-Suharto era. She argues that often nowadays the idea of participation means a shift of responsibility to local communities, without the concomitant benefits. Legal right of tenure is not returned to these communities, and yet they are expected to guard natural resources in protected areas from outside encroachment. Local communities are thus caught in a catch 22: they are usually blamed for the failures of participatory programmes, but they have had no right of refusal or authority to incorporate any perception of benefits. Only when co-management is based on actual fair sharing of both decision-making authority and management functions, in other words 'collaboration' rather than simply 'participation', will truly cooperative arrangements be able to realize conservation goals.

Semiarto Aji Purwanto, in Chapter 15, examines the 'disastrous' impact of Tanjung Puting National Park in Central Kalimantan upon livelihood options and perceptions of the park among members of the surrounding communities, concentrating upon the lack of consultation in planning and of participation in implementation. Tanjung Puting is famous as a wildlife sanctuary for orang-utans, funded by the Orang-utan Foundation International (OFI), but is also the home of many other species of primates. Logging, both legal and illegal, mining, and other activities such as conversion to agricultural land, all of which have taken place in the forests of the area, have contributed to the loss of habitat of these primate species, and are leading to a decrease in their numbers. Purwanto shows that for the various communities surrounding the park, illegal logging has become the most attractive livelihood alternative. Big businessmen readily lend villagers the money to enter the forest for a month or more, to bring back wood, which the lenders sell at double the cost they have paid the wood-cutters. The money that the wood-cutters receive is considered faster and easier than that which they can get by other means, allowing the attainment of a lifestyle simply unreachable by formerly pursued economic activities. Not only are they now locally locked into this system by a relationship of debt and patronage with these businessmen, but global demand for timber has also contributed to the continuance of this system. The efforts of the OFI and the Tanjung Puting National Park officials to curb the illegal logging has only fuelled resentment of the villagers on the borders of the park. They have increasingly come to hate the park and the orang-utans in it, who they think are getting more international attention and better care and facilities than local people have from the international community and the government. The fact that the government blames the villagers and targets them for prosecution, instead of the businessmen who sell the wood and the political authorities who have granted concessions within park boundaries,

ensures that there will be no real solutions to the problem of the deterioration of Central Borneo forests.

Misplaced blame for forest destruction is also discussed in Chapter 16 by Maribeth Erb and Yosep Jelahut on the situation of the Nature Recreation Park near Ruteng on the island of Flores in eastern Indonesia. They point out, as Afiff and Lowe did, that increasingly militaristic global conservation agendas are linked to broader issues of global security in the post-9/11 world. The recent growth in a belief that environmental degradation will lead to scarcity and conflict has led to attempts to explain many incidents of conflict simplistically and inappropriately in terms of environmental degradation. This was the case in Manggarai District on the island of Flores, under the local government that was in charge between 1999 and 2004, where incidents of land conflict, which had long been a problem in West Flores, were linked to evidence of environmental degradation, such as flooding and decreasing natural springs. The regent of the time chose to resolve the problem of land conflict and environmental degradation by a radical policy to 'clean up' the state forest lands, which had been turned into a Nature Recreation Park with Asian Development Bank (ADB) funding in 1992–1993. These pre-emptive strong-arm tactics led to shootings of protesting villagers, and human rights violations of greater severity than the shootings in the Komodo National Park mentioned by Afiff and Lowe and by Gustave and Borchers in their chapters in this part. Erb and Jelahut, citing Holt's (2005) argument that indigenous peoples in conditions of low demographic pressure are not likely to develop ideas of 'conservation', still argue, as did Holt, that changing circumstances may lead to village communities developing awareness of environmental degradation, and their own programmes of conservation.

The themes of conflict and growing conservation awareness are also dealt with in the two chapters that discuss marine parks in Eastern Indonesia and the difficulties that have been involved in gaining a consensus on how to protect those environments. Eastern Indonesia, covering roughly the area of the Wallacea hotspot (Mittermeier *et al*. 2004: 17), is considered one of the areas of the world richest in marine biodiversity, and has attracted increased attention and funding for conservation in the past decade. Clearly, marine areas pose a particular challenge for environmental conservation because of the relative ease with which people can pass across the seas and the relative invisibility of the effects of their passage, including their exploitation of resources, on underwater life. The amount of technical sophistication needed to assess marine damage and guard against it has meant that before international attention was paid to marine areas, the measures to protect these areas had not been a main priority in the countries of the Malay Archipelago. In the case of both Komodo National

Park, discussed by Ruddy Gustave and Henning Borchers in Chapter 14, and Wakatobi National Park, discussed by Chris Majors in Chapter 17, the organization that has become deeply committed to the protection of biodiversity in these areas has been TNC (see Chapter 9, as well as Acciaioli's treatment of TNC priorities and policies for the terrestrial Lore Lindu National Park in Chapter 18).

Gustave and Borchers in their case study of TNC involvement in the Komodo National Park, located between the islands of Sumbawa and Flores, challenge, however, the TNC claim that it is really involving local communities in a collaborative management initiative. As pointed out also by Afiff and Lowe in Chapter 12, there has been considerable resistance to what have been seen as the very ɒraconian measures of TNC in protecting this marine park. Though the intention of the funding for the 'co-management initiative' designed for the Komodo National Park was 'active involvement of local communities as managers and beneficiaries of better biodiversity management' (see Chapter 14), the local communities, they argue, are actually only given the ability to provide 'additional input', the lowest level of participation, as discussed by Moeliono. What has resulted from TNC's co-management initiative is the creation, they argue, of a 'state within a state'; local communities living on the islands in and near the park are restricted in all kinds of daily activities that are seen in any way to compromise the preservation of biodiversity, a value which is vaunted above socioeconomic viability. Although local communities have been increasingly restricted, TNC, Gustave and Borchers argue, is aware that it is outside fishermen and poachers who have been posing the greatest threat to the Komodo marine environment. For this reason Gustave and Borchers argue for a 'sustainable use' model of access to the park for local residents, instead of the 'biosphere reserve model' of zonation that is favoured by TNC and some other conservation organizations. They also argue that the alternative livelihoods offered by TNC to local fishermen to replace the reliance on fishing in the park have not been feasible or acceptable alternatives for most of the people who actually reside within the park.

Chris Majors, in his examination of Wakatobi Marine Park, covering the archipelagic region to the southeast of Southeast Sulawesi Province, also illustrates how the local communities are often in conflict with TNC and their conservation methods. Whereas Gustave and Borchers concentrate upon the social dimensions of failed participation, including divergences of livelihood practices of local communities from TNC directives, Majors, while also emphasizing such incompatibilities, adds the dimension of conflicting knowledge between the environmental beliefs of local populations, such as the Bajo of this region, and the scientific paradigm of conservationists. In Wakatobi Marine Park, TNC has not been as successful in reducing the use of destructive

fishing methods, such as dynamite and cyanide, or incursions into areas where stocks of protected species, such as giant clams (*Tridacna gigas*), green turtles (*Chelonia mydas*) or Napoleon wrasse (*Cheilinus undulates*) are located. Majors accounts for the persistence of such practices not only by reference to such practical variables as the continuing mobility of the Bajo in their search for fishing grounds, but also in regard to their beliefs regarding the influence of local spirits and the dynamics of 'good fortune' in determining success at fishing. Such factors explain the divergent perceptions of the Bajo from marine scientists' evaluations of the effect of overfishing and destructive fishing, despite these fishers' in-depth knowledge of their marine environment and the widespread evidence of species decline. The strict enforcement and hardline approach taken by the environmentalist groups in Wakatobi have alienated the Bajo fishing populations and have been mainly counterproductive, Majors argues. However, he suggests that increasingly affluent and less nomadic lifestyles, ironically among those Bajo who have gained most from past use of destructive fishing techniques, are leading to an increasing awareness of the destructiveness of their own fishing methods. He argues that environmentalists should build on this awareness, and attempt to be sensitive to the social constraints and cultural perceptions of communities, so as to be able to work with them in an effort to build a successful conservation programme.

Greg Acciaioli, in his chapter on the communities living in the Lindu enclave of the Lore Lindu National Park in Central Sulawesi, another park co-managed by TNC, also argues that local communities are developing their own type of awareness and agendas about conservation. However, he emphasizes that participation in co-management programmes designed by conservation organizations such as TNC may be a vehicle used by customary leaders to reassert control in contexts where they wish to limit in-migration and re-establish the inalienability of land from its 'indigenous' customary custodians. His investigation of the pragmatic strategizing in which environmentalist idioms are invoked leads him to question the degree to which participation in such programmes may lead to a changed subjectivity of environmental concern, what Agrawal (2005) calls 'environmentality'. Acciaioli highlights the multiethnic constitution of communities in the Lindu enclave and some of the surrounding communities, a factor that presents heightened complexity in tracing lines of alliance and conflict crystallizing around conservation issues. Migrants from many other ethnic groups have moved into the Lindu plain, both under government programmes and as spontaneous migrants, predating the establishment of the Lore Lindu National Park. Local NGOs, in alliance with indigenous people's organizations, tend to argue for the legitimacy of customary claims by local indigenous groups, but recently defended the occupation by New Order

transmigrants of one core zone of the park, on the grounds of social justice. This defence has led some activists to interrogate the model of a national park itself as an imperial Western imposition and challenge the right of existence of national parks in Indonesia altogether. They reject the 'biosphere' model of zonation, and instead claim that local peoples can use the land and its resources sustainably. Partially in response to these radical voices, TNC has become more accommodating to the claims of not only indigenous users, but also the settlers, suggesting that all communities be represented in village conservation organizations that have rights to oversee the lands within and around the park. However, the efficacy of such multiethnic village conservation organizations has yet to be proven, and the potential for hijacking them for the indigenous people's agenda remains.

Reinforcing Moeliono's highlighting of the importance of considering the larger political framework dictating the constraints on protected area formation and maintenance, Hood Salleh and Keith Bettinger present in Chapter 19 an overview of the parameters of the relationships between protected areas and indigenous peoples in the decentralized framework of Malaysia, and the variation in policies among different states. The way Orang Asli communities are perceived and treated in the states of Peninsular Malaysia seems to be far more contradictory and restrictive than is often the case in Indonesia; in contrast, the indigenous groups of Sabah and Sarawak, except for some of the very smallest, such as the Penan, whose members lack the requisite political clout, tend to fare much better in terms of access to and privileges in protected areas. Salleh and Bettinger demonstrate how the lack of alignment between the administration of Orang Asli issues by the Department of Orang Asli Affairs and the policies for protected areas set by the Department of Wildlife and National Parks, as well as the administration of these areas by the states, has led to ad hoc measures to control the interactions between Orang Asli and protected areas, 'subject to the caprices of the local management'. Such splitting of responsibility over affairs of importance to the indigenous communities makes it impossible for anything equitable to be done for them in terms of rights over land. Although currently the Orang Asli inhabiting a number of different parks in Malaysia are basically tolerated by the different states, they are subject to being evacuated from them at any time. Salleh and Bettinger argue that continuing extraction and overexploitation of resources have led to a 'natural resource exploitation trap' for Malaysia as a whole, a syndrome that is likely to continue working against the construction of a framework to integrate indigenous lands and protected areas. Most problematic for indigenous communities are the attitudes towards them. If they attempt to defend the lands they consider their own, which are often included in protected areas, from others who are exploiting the land, they are

considered 'backward' and 'primitive', not wanting to 'modernize'. On the other hand, they are blamed for the destruction in the parklands when the government and conservation agencies are showing concern about 'conservation'. They are portrayed in entirely contradictory ways as being both 'anticonservation' and 'antimodernisation'.

The question of participation is examined from another angle in the next two chapters, which give us overviews of two other countries in the Malay Archipelago, Brunei and Singapore. Both are small countries with very strong governments that almost totally control the conservation agendas. Though similar in these respects, they also contrast quite interestingly. Brunei has a small population, formerly pursuing rural livelihoods but now increasingly made up of civil servants, with still extensive forest land, whereas Singapore has a high population density and is highly urban. These countries both contrast quite starkly with Indonesia and Malaysia, since the governments, though considerably authoritarian, are also known for their extension of social services to their populations. These two cases thus raise the difficult issue of how to evaluate protected-area policies that often evidence little collaboration in planning and strictly channelled participation in implementation, yet evidence high levels of satisfaction from their populace.

Daniel Goh, in Chapter 20, demonstrates how the push for development in the small island state of Singapore has seen conservation organizations fight often losing battles to conserve what they see as natural spaces. Bona fide 'national parks' in Singapore are few, while there are several places recognized as 'nature sites' that are afforded 'protected status', but not of a permanent kind. Goh relates how conservation organizations won a battle to include the coastal flat area of Chek Jawa on an offshore island as a 'national park in the making', even though there had been plans to reclaim land there and turn much of the island into housing estates. The battle was won because of the ability of these organizations to muster the 'memories of the nation' and construct 'alternative histories' that did not relegate *kampong* life to an anterior stage that needed to be transcended to realize the linear vision of progress of the developmental state encoded in official national history. The Singapore Nature Society's use of the '*kampong*' (village) memories of Singaporeans' past to garner public support to save a place on an island associated with the 'last of Singapore's kampongs' is equivalent in some ways to the calls of indigenous communities to keep their rights to use the land in the face of national park incursions. In the case of Singapore, however, the tables were turned, and it was the populace who clamoured to 'save the wilderness', and make the land into a 'national park', instead of the state. In this case certain sections of the population of Singapore are more conservation-minded than the state, and Goh exhorts us not to dismiss

the power of middle-class conservation convictions. As in the case study analyzed by Erb and Jelahut, we can see how Holt's argument about a conservation mentality developing only among those who feel they have lost substantial portions of their resources and territory is applicable once again in the Singaporean case.

Unlike Singapore, as Azman Ahmad shows us in Chapter 21, the largest section of the population of Brunei is 'indigenous', and almost three-quarters of the country is natural forest. However, like Singapore, Brunei has few national parks; this may be because the sense of a need for conservation is not yet very great in Brunei, for, as Ahmad states, 'a national park is a relatively new concept'. However, the two that do exist comprise one-tenth of the country. The quest for ecotourism revenue has been a major incentive motivating the government's erection of these parks, and local minority communities have benefited from employment and business opportunities, despite the total absence of collaboration in decision-making concerning the planning of the national parks. This counterexample demonstrates the importance of taking into account larger frameworks of governance, since acceptance of the imposition of protected areas is very much in line with general attitudes towards the political system, an absolute monarchy that derives much wealth from oil and gas, and whose beneficence is extraordinary (Bernstein 1997). The acceptance of non-collaboration and 'passive participation' thus accords with the general acceptance of other developmental bestowals of the state.

All in all, the chapters in this part reveal a great range in the contestations and accommodations of protected-area policy with the aspirations of peoples living both within (e.g. in enclaves) and surrounding these areas. Levels of participation in implementation of park policy vary from acceptance of the imposition of policies, with little opportunity for local communities to collaborate in the previous planning or even participate in implementation, to participation in village-level conservation organizations with some scope to affect policy parameters, although collaboration in planning seems still relatively absent in the region. Attitudes towards levels of permitted participation range from endorsement of a 'beneficiary approach' to violent confrontations. There is also a variety of ways that the vehicles of participation allow local groups to pursue their own agendas. Some of their strategies converge with the conservation imperatives of transnational conservation organizations, while others seek to reappropriate authority to local constituencies. All these factors complicate the possibilities for both collaboration and participation in a general project of conservation maintaining threatened biodiversity and also benefiting the, similarly threatened, socioeconomic livelihoods of local communities.

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12

Collaboration, conservation and community: a conversation between Suraya Afiff and Celia Lowe

SURAYA AFIFF AND CELIA LOWE

Introduction

Questions of biodiversity conservation, national parks, ecoregions and social development are often pursued through transnational collaboration. Rather than a flow of authoritative knowledge moving from the 'west to the rest', the problems of nature conservation can usefully be formulated in dialogue across boundaries of spatial and social difference. National parks are especially salient spaces for thinking through what it means for Southeast Asians and Euro-Americans to work together. For one, environmental problems, like smoke from forest fires or fish that spawn in coastal mangroves and school in mid-ocean, do not respect the authority or borders of nation-states. In terms of society, models for thought and social action also engage many kinds of actors across national boundaries and across lines of difference within the nation-state. Projects of biodiversity conservation continually emerge within these collaborative spaces.

In the form of a dialogue, Suraya Afiff (S.A.) and Celia Lowe (C.L.) join together in this chapter to discuss what it means to collaborate around issues of nature conservation within Indonesia's national parks and ecoregions. This dialogue is informed by our combined expertise working in the Sulu-Sulawesi Sea Ecoregion, national parks across Indonesia, and with non-governmental and environmental institutions such as Walhi, Yabshi, Karsa, CI and WWF.[1] Suraya Afiff comes to the conversation with 15 years' experience as a scholar and

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environmental activist in Indonesia. Originally a student of biology, she is an expert on land conflict in Indonesia. As one of the original authors (with Tony Whitten and Roehayat Emon Soeriaatmadja) of *The Ecology of Java and Bali* (Whitten *et al*. 1996), she became interested in how ecological problems and solutions are human problems and not simply biological problems. She worked for Walhi's Biodiversity Conservation Program in the early 1990s and more recently has taught political ecology at the University of Indonesia.

Celia Lowe is Associate Professor of Anthropology at the University of Washington in Seattle. She has written a book, *Wild Profusion: Biodiversity Conservation in an Indonesian Archipelago* (2006), on the collaboration between Yabshi and CI to create the Togean Island National Park in Central Sulawesi. Her interests include knowledge-making and nature-making in projects to conserve biodiversity in Southeast Asia. She is particularly interested in how cosmopolitan expert knowledge travels from the global South to the North and vice versa, and how knowledge is transformed by the process of travel. Her work in the field of postcolonial science studies concerns how Indonesian conservation biologists and other scientists sustain a position in the middle between, on the one hand, Northern scientists and their expert knowledge, and, on the other, Indonesia's fishers and farmers and their understanding of flora, fauna, land and marinescapes.

The authors have worked together to try and understand what it means to collaborate around questions of environmental justice from different positions in the Indonesian and US academies and in activist worlds. They have been inspired by Bell Hooks and her essay 'Building a teaching community' (Hooks 1994), in which she comes together as an African-American woman with her White male colleague, Ron Scapps, to provide for the possibility of critical dialogue across intransigent boundaries of apparent difference. Hooks argues in her essay that all such boundary crossings must be seen as legitimate, yet still open to critical examination. It is only through such attempts that existing systems of political and symbolic domination have the possibility of being transgressed. In this chapter, Afiff and Lowe attempt to develop the dialogic process of collaboration across a transnational divide that bridges location and experience, while recognizing that similarity and difference are always established in the moment rather than determinable in advance.

Community participation and Indonesia's national parks

S.A. I would like to begin by discussing a specific case. In 2003, Yustinus Ade Stirman wrote an article in *Sinar Harapan* newspaper on the question of communities and collaboration in Komodo National Park in Flores.[2]

In his article, 'Decentralization and the management of Komodo National Park', Stirman explored the possibility of finding effective ways to manage the park. He wrote that although, in principle, the collaborative idea was quite attractive, whether the initiative has resulted in proper consultation with local communities is still questionable. Stirman's article was triggered by the fact that some local communities in Komodo rejected the collaboration initiatives proposed by the Nature Conservancy (TNC), an international conservation group that, for a number of years, has supported the Indonesian government to manage Komodo National Park.

C.L. The Nature Conservancy case you refer to exemplifies the problem of community consultation in national parks across Indonesia. Since 'community' first became an important rubric for thinking about conservation, mostly due to the historical failures of conventional wildlife parks but also due to the political independence of postcolonial nations, community engagement has nearly always been a case of how to convince people to appreciate the logics of conservation established elsewhere. Even the economic mandates of the Integrated Conservation and Development Programs (ICDP) of the 1990s were designed from afar. Communities could only contribute to pre-established national, natural and economic imperatives; they could adapt these structures but they were never expected to transform them.

S.A. True. Parks around Indonesia were established through the influence of foreign funding, expertise and ideas. Whether in strict nature reserves (*Cagar Alam*), or in national parks (*Taman Nasional*) where some human activities might be allowed, the ultimate goal has been how to reduce or control people's resource use within park boundaries. The problem is that many areas designated as parks are also those areas where local communities have traditionally cleared the land for agriculture, collected non-forest products, or fished for food to make a living. Conservation organizations often, therefore, have promoted resettlement of park populations as their desired option. As widespread resistance among local people and also Southern activist groups, including those in Indonesia, began to emerge, conservationists then promoted ICDPs. In Indonesia, the ICDP approach has been implemented since the 1980s, though mostly in the 1990s. Under this approach, conservationists were required to collaborate with the people who lived inside and around the parks. The World Bank, in fact, is one of the main institutions that has supported this approach in Indonesia.

C.L. If we look across time in Indonesia – the Malay Archipelago – projects of nature-making have always involved collaboration. Starting in Ambon in the late seventeenth century, Rumphius derived much of his understanding about 'curiosities' from Malay peoples (Rumphius (1705) 1999). In these collaborations,

Malay peoples were able to change the order of things that Rumphius recorded, not just fill in details in a pre-established taxonomic grid. For instance, Rumphius credits someone named 'Pati Cuhu' for teaching him about Indies plants, and Rumphius categorizes Indies plants according to Malay categories like 'forest ropes' (rattans). By the late nineteenth century, however, Indies peoples had become mere assistants in the project of a universalizing natural history. They could no longer articulate the important aspects of nature and their organization. They might only help European naturalists to pack up their crates of corals to send off to Leiden, as one 'Jusuf' from Java did for J.H.F. Umbgrove on the voyage of the *Eriadnus* to the Togean Islands in the 1920s (Umbgrove 1939). In the present moment we are somewhere in between Rumphius' 'curiosity' and Victorian 'natural history', it seems to me. Indonesian scientists and activists with training in the natural sciences are frequently the ones framing questions important to nature-making, and have the opportunity to ask what should count as nature. And yet, these same scientists, working for international conservation NGOs, are unable to change the fundamental structure of what will count as conservation. This is still established in the North.

S.A. What is interesting in the Komodo case is that, according to Stirman, a number of well known Indonesian environmental and human rights groups, such as WALHI (Wahana Lingkungan Hidup Indonesia, Friends of the Earth Indonesia) KONTRAS (Komisi Untuk Orang Hilang dan Korban Tindak Kekerasan, The Commission for Disappearances and Victims to Violence) and ELSAM (Lembaga Studi dan Advokasi Masyarakat, Institute for Policy Research and Advocacy), have supported the community's position that consultation and dialogue have been lacking. The idea of community participation employed here has been flawed. This has led to community protests as a way for people to resist inappropriate conservation measures. Local community protests against conservationists, of course, are not new. But very few protests in Indonesia have gained international or national attention and support until more recent years.

C.L. I would agree that there is increasing attention to social justice outside of the large conservation NGOs, although there is still insufficient awareness within them. For example, ICDPs failed fairly dramatically in the 1990s, but there was little self-awareness on the part of the large conservation institutions as to what the limitations of their efforts really were or why they failed. In my work on the United States Agency for International Development (USAID)-funded Natural Resources Management (NRM) project in Bunaken National Park, I discovered many instances when failure in the collaborative process was blamed on the community itself rather than on the inappropriate methods of the project. For instance, when the necessary actors did not

participate in a community meeting about mangrove cutting, the project blamed the absent members rather than their design of the participation activities (Lowe 2003). Or when some Bunaken community members voted against project plans causing plans to fail, this was blamed on a 'cultural' inability of Bunaken peoples to understand 'democratic' processes.[3] Agreement with conservation initiatives was valorized as 'participation' while disagreement has been understood as recalcitrance and primitiveness. The Komodo case is the most egregious example of coercive conservation that I am aware of in Indonesia, and yet it has also been a great success in terms of the ability of environmental and community activists to resist inappropriate conservation measures.

S.A. I think the Komodo and Bunaken cases raise the question of why 'enforcement' has become a major focus of internationally led conservation efforts in Indonesia at this precise moment. If the 1990s were the moment of the ICDP, the 2000s have inaugurated the decade of 'enforcement'. One may want to raise the question of whether using force against local communities will increase the effectiveness and sustainability of park management. In a country such as Indonesia, which has a long experience of deep structural inequalities, using state force against the villagers as a means to manage the park will only increase opposition against conservation. Some national actors, especially, view this state violence as illegitimate and as connoting the legacy of 'authoritarian' practice during the Suharto regime. Furthermore, as international conservationists collaborate with the state, national actors might view this as an act of 'imperialism' in the context of conservation programmes.

C.L. I see the move to militarized enforcement measures as not simply an outcome of 'lessons learned' by internationally funded conservation projects and their managers. I believe we must look to a larger international context of the post-9/11 world we live in and the so-called 'global war on terror'. As George Bush has said, you are either with us or against us; if you are against us we will use force against you. It is within this climate, which imbricates both the foreign conservation organizations and the Indonesian state, that we must understand the (re)turn to 'enforcement' and away from community-based conservation. This ideological climate provides a new mandate to employ authoritarian methods.

S.A. I think I would like to be cautious to make such big claims because using a coercive approach in conservation, again, is not new, although I fully agree with you that George Bush's open justification of the use of militaristic action against those who refuse to follow his way has inspired many to act in the same way. The current ideological climate that you mention might intensify the coercive tendency that has always been practised in conservation.

Transnational collaborations

C.L. There are many dimensions to collaboration. We have been discussing collaboration with communities. There is also the question of collaboration across transnational divides, most especially the divide between Indonesian conservationists and activists and their Euro-American colleagues.

S.A. Yes, I would like to write of this in relation to the question of public support for conservation in Indonesia. Despite the support by transnational institutions such as TNC, WWF and CI for protected-areas management in Indonesia, the major conservation groups and their national allies are far from successful in gaining significant public support. The possibility of broad collaboration with national environmental groups will be hindered if the transnational conservation organizations continue to rely primarily on state action and alliances to criminalize local people. The Nature Conservancy case in Komodo National Park is an example of how an international NGO can alienate local people as well as Indonesian environmentalists and activists. The Nature Conservancy was blamed for causing the death of a fisher who fished in park waters. It is not that TNC directly killed this man. Rather, TNC supported the government to manage the park through activities like patrolling. It was, actually, the government enforcement agents who fired at this fisher, but they used the boat and fuel that were paid for by TNC.

C.L. There is a similar example from North Sulawesi. In Manado, the USAID-led NRM staff worked to set up the North Sulawesi Watersports Association. Having found community collaboration too frustrating, the project turned to an alliance of business owners to protect conservation interests in the park. While the association is not funded directly by the American government, staff of NRM were involved in setting up the organization, which then used its influence and funding to prosecute fishers and to arrest mangrove cutters in the park. The influence of NRM was not to promote a just legal system, including a just defence for those arrested; it was to influence the court system to get the outcomes they desired. Again, no direct funding for these prosecutions was involved, but the project's influence on them is undeniable. This business and legal oriented strategy also, of course, has abundant precedents in Suharto-era Indonesia.

S.A. Parallel to the Bunaken case you have mentioned, TNC also sees itself as innocent since, from its perspective, the action was carried out by the Indonesian government enforcement officials. But for a number of Indonesian environmental and human rights organizations, TNC directly created the conditions and the means for such an incident to happen. This situation is not that different from the case of foreign mining exploitation, such as Freeport in

Papua or ExxonMobil in Aceh. These multibillion dollar companies also were alleged to have provided some funds and facilities to the Indonesian armed forces to protect their investments. Rights groups have accused these corporations of supporting human-rights violations conducted by the Indonesian military and other enforcement agencies. Therefore, it is not surprising if this incident in Komodo National Park has sparked widespread opposition from numerous Indonesian environmental groups, including those who are concerned with human-rights issues. These Indonesian groups have successfully lobbied the national commission on human rights (Komnas HAM) to investigate whether the incident is a potential human-rights violation. The activist response to what happened in Komodo National Park was actually unique and unprecedented in the history of park management in Indonesia.

C.L. I believe we can separate out different sets of interests even within these organizations. For example, in Bunaken, a local NGO (Kelola) that worked with NRM, was initially successful in collaborating with the foreign-funded project, while still maintaining a sensitivity to Indonesian politics and history. Early on, they were able to use their affiliation with the project to successfully thwart plans to remove the Bunaken population from the park. So, even in the middle of such a collaboration interests can diverge. In my experience, foreign conservationists are by and large unaware of this divergence, and tend to frame differences as a question of the lack of development or understanding on the part of their Indonesian staff.

S.A. Celia, you are pointing to an important issue in the context of transnational collaboration between Indonesian and foreign environmentalists. Under this current situation, Indonesian environmentalists are relatively well represented in both the international and Indonesian groups. My question would be how the significant increase of Indonesian representation shapes the aims and goals of conservation and the ability of conservation groups to work with communities who live around parks. Back to your story about the colonial era natural historians, the story shows that increased representation will not automatically result in increased sharing of ideas and concepts. Nor will the result be the total hegemony of the international organizations.

C.L. Yes, this hybridity is so complex. On the one hand, I am aware of examples where 'Indonesian' participation has managed to subvert from within the ill-formed plans of the international groups. On the other hand, I am also aware of examples where 'Indonesian' participation simply means the nationalization of those conservation models that are proposed as universal. Like earlier forms of natural history, the contemporary conservation paradigm allows for limited elite Indonesian 'participation', and sometimes a clandestine reorienting of the project, something like resistance, but not for true

'collaboration'. True collaboration would mean the chance to shift the paradigm. It would mean a true openness on the part of foreign organizations to models coming from elsewhere. Those who oppose foreign models are simply not hired to work on foreign-funded projects, although this is not simply an 'Indonesian' thing. It is also the case that international conservation institutions seem to hire mainly biologists and economists rather than those who are trained to understand social complexity or specificity.

S.A. I was interested to learn how the word 'collaboration' is defined in the English dictionary. It turns out that this word has two different meanings. The first – and the more common sense of the word – is the act of working together to produce a piece of work. But the word collaboration could also mean the act of helping an enemy who is occupying your country during war. How does this help us to think about collaboration around initiatives to establish and manage parks in the Southern context? I absolutely agree that these things cannot simply be put in the boxes of 'East and West' or 'South and North'. It is about injustice and the use of violence, about the paradigms adopted in conservation, about false assumptions, about threats, and about 'manufacturing' participation (like Noam Chomsky's 'manufacturing consent' (Chomsky & Herman 1988), Each of these things might be advocated for or opposed by Indonesian or foreign conservationists alike. Genuine collaboration cannot happen without trust and respect. Genuine collaboration also could not happen without the willingness to share some degree of power. Therefore, it cannot happen under conditions of domination or in the situation when one imposes one's own beliefs upon others.

Conservation, its interests and its publics

C.L. The environmental movement around the world is suffering from a profound inability to communicate with its publics or to form shared agendas around common interests. Recently, Michael Shellenberger and Ted Nordhaus have written a spectacular essay, 'The Death of Environmentalism' (2004), on the failures of the environmental movement in the US to develop effective collaborations around the issue of global warming. By defining environmental interests so narrowly, by imagining the environment as a 'thing' that has interests distinct from human interests, by failing to recognize the inherently political nature of the human welfare-environment nexus, and by proposing merely technoscientific fixes rather than political alliances as the appropriate medium for problem-solving, the so-called environmental movement has left a string of failures in its wake. Not only does the threat of global warming continue to rise and the mileage ratings for automobiles on US highways continue

to fall, US autoworkers are also suffering from job insecurity, as they have become dependent on producing larger and less efficient cars. Rather than bracketing out the needs and interests of US workers and labour unions, Shellenberger and Nordhaus argue, these interests have to be built into how the larger problem is conceptualized. Larger alliances need to be built around the combined welfare of humans and the physical world that surrounds us.

S.A. The failure of conservation programmes in Indonesia is like the failure of environmental campaigns on climate change in the United States. These campaigns need a long-term vision that can bring broad support from various sectors and groups to the movements. They need to develop strategies that are inclusive rather exclusive. The Rumphius model of collaboration that we both support is hampered partly due to the particular idea of nature as 'pristine', which is inherent in the conservation paradigm. I remember how, for the first time, I had an opportunity to visit Adirondack National Park, located not far from New York City, in July 1993. I was really struck by how people who live in the American countryside also have protested against park authority. Sometimes these protests have even involved violence. The foreign expatriates who provide assistance in park management in Indonesia never tell us about such stories. I wonder if they even know of them? More recent studies, in fact, show how the history of removing people to create protected areas has also happened in the US (see Neumann 2004; Keller & Turek 1997; Spence 1999; Warren 1997 for the United States; and Dowie 2006; Laungaramsri 2002; Neumann 1998 for other parts of the world).

C.L. Yes, and I would want to suggest that we must place human needs and the nature we want to save into the same frame. The project of placing human and biological well-being into the same frame would not mean that all humans are the same or have the same needs. Simply by hiring a few Indonesian staff, you haven't solved the problem of how the needs of fishers and farmers living near protected areas will be met along with the nature we also want to protect. Healthy conditions for people and parks can only come about through weighing them equally and together, and by understanding the needs of those who appear to be weaker or not relevant to, or even opposed to, our goals. This has been one of the hallmarks of successful NGO activism in Indonesia itself.

S.A. It now becomes clear that the fundamental problem lies in the transnational conservation paradigm and how it has been adopted in Indonesia. Under this paradigm, exclusion of people from conservation areas has been the ultimate goal. If we are not talking about physical removal, we are speaking of exclusion in a practical sense. However, many protected areas were established in places that humans have historically used for various purposes. Thus, almost all protected areas in Indonesia end up with various degrees of restriction of

local people's access within the park area. If this exclusionism continues to be the dominant paradigm used by conservation advocates, representation of Indonesians in the 'national' or international conservation groups would have no significant impact on improving relations between local communities and conservation groups.

Part of the reason why ICDPs have been unsuccessful in protecting biodiversity is because they have assumed that threats to protected areas come from local people alone. In fact, Wells and others argue, that 'direct threats [to parks] from local communities ranked well behind road construction, mining, logging concessions, and sponsored immigration' (Wells *et al*. 1999:4) In other words, it is state-sponsored development projects that have caused the major threats to protected areas.

One good example of how international groups focus on local people rather than larger structural and corporate issues can be seen in the controversy concerning Indonesian policy on mining in protected areas. In 2003, the Parliament – despite protests from Indonesian NGOs and even from a number of government officials themselves – passed a new regulation allowing corporations to mine in protected forests. It was publicly acknowledged that this new regulation was successfully passed because of extensive lobbying by transnational mining corporations. The Indonesian Mining Ministry had granted these corporations mining concessions to boost foreign investment. Ironically, most major transnational conservation organizations avoided involvement in the protests against the new mining law. One of the reasons that might explain their silence is the fact that many of these conservation organizations receive donations directly from the mining corporations. Involvement in the protests might hurt their funding support in the future. Here comes the limit of the work of foreign (mostly Western) conservationists.

C.L. This is interesting. What you are suggesting is that it is not only the sense of who should collaborate and work together that needs to be broadened, but also the sense that who creates harm to both nature and communities needs to be broadened as well.

S.A. Yes. Conservation or any other 'environmental' issue will only prevail if it is supported by society. This is what many conservation organizations supported by international groups have failed to realize. Even in the North American and European countries I have observed, conservation efforts could only succeed though broad societal support. It is society that then puts pressure on the government. In developing countries, such as Indonesia, what often happens is that international conservation groups collaborate with the state and not the people. The biggest challenge for conservation efforts in a country such as Indonesia, in my opinion, actually lies in the realm of public support.

Without public support conservation might continue to fail. Shellenberger and Nordhaus (2004) argue that solutions should be developed by teams of individuals who represent different interests.

This is why the issue of collaboration becomes relevant and an important topic of discussion, since finding solutions to environmental problems is not just the concern of one nation or a few narrowly defined interest groups.

End notes

1. Wahana Lingkungan Hidup Indonesia (Walhi); Yayasan Bina Sains Hayati Indonesia (Yabshi); Lingkar Pembaruan Pedesaan dan Agraria (Karsa); Conservation International (CI); World Wide Fund for Nature (WWF).
2. Also discussed in Chapter 14.
3. In the NRM II project's *Notes From the Field*, one project manager wrote, 'despite our best efforts in awareness raising, capacity building, institutional strengthening and other impressive-sounding endeavors, the fact remains that there will always be environmental 'bad guys' who require a 'stick' rather than a 'carrot' approach' (cited in Lowe 2003).

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13

Hands off, hands on: communities and the management of national parks in Indonesia

MOIRA MOELIONO

Introduction

Conservation became an important issue on the agenda in Indonesia during the 1980s, influenced by international events such as the drafting of the World Conservation Strategy in 1981 by the World Conservation Union (IUCN), the World Wide Fund for Nature (WWF), the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Environment Programme (UNEP), the second international congress on National Parks in Bali and the publication of *Our Common Future* in 1987 (Mulyana 2002). This is not surprising considering that conservation efforts have been funded mostly by international organizations. The World Conservation Union, WWF, FAO and ADB (Asian Development Bank) have been present since the 1970s, and, more recently international organizations such as Tropenbos, The Nature Conservancy (TNC) and Conservation International (CI) have joined the crowd.

In consequence, the government intended that at least 10% of its forest area should be set aside as conservation areas. Today, conservation areas cover about 23 million ha of the 120 million or so of state forest land. All of this area was designated without any regard to existing rights of local and indigenous communities. Indeed, local communities were considered the main threat to conservation areas.

In 1999, Indonesia's government underwent some radical changes. The rigidly hierarchical and centralized government structure[1] was transformed

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into a highly decentralized system, where autonomy was established at district rather than provincial level. For many local and indigenous communities these reform and decentralization processes were understood as a return of customary or *adat* rights. In many places, customary communities demanded, reclaimed or forcefully occupied large areas of forest, including conservation areas. Meanwhile, NGOs in support of customary communities called into question the legitimacy of conservation areas, indeed of the whole forest estate in Indonesia. Most of these areas have not been officially gazetted and often have no clear boundaries (Contreras-Hermosilla & Fay 2005). Conflicts, which were long suppressed by state forces, erupted throughout the country.

By 1998, participatory and collaborative management had already been in fashion for some time. The government as well had started to experiment with participation and had become much more open to work with NGOs. Non-governmental organizations had found a new vocation. Donors, governments, communities and sometimes even private companies looked to NGOs to build an acceptable relationship with communities.

Participatory approaches to management and conservation of natural resources became part of the solution to situations in the field. However, the question is whether local communities are able and willing to participate in managing a national park for abstract and long-term purposes. This chapter will discuss this issue in the context of decentralization in Indonesia. Using examples from some national parks in Indonesia, limits and constraints of participatory approaches will be discussed to look at the question: 'Will and can participation of local communities save national parks?'

Decentralization in Indonesia

When Indonesia gained its independence in 1945, a first priority was to unite the more than 13000 islands and more than 600 different ethnic groups. To this end a highly centralized structure of government was developed, which reached its peak during the three decades of the Suharto regime. During this period, all power was concentrated at the centre in the office of the President (Wrangham 2002), and the Ministry of Forestry became one of the most powerful departments, overseeing almost two-thirds of Indonesia's territory and all revenues thereof.

The Asian economic crisis of 1997 and the re-election of Suharto in 1998 triggered large-scale social unrest and highlighted the problems of chronic *kolusi, korupsi dan nepotisme* (KKN or collusion, corruption and nepotism). Student protests and demonstrations fuelled the toppling of the New Order in May 1998. Shortly afterwards, Indonesia embarked on a process of decentralization

whereby autonomy was established at municipal and district levels. Decentralization is often seen as the empowerment of local governments and the way to democratization (Ribot 2002). In Indonesia, however, decentralization is understood more mechanistically as the transfer of power and authority for government affairs to the districts with the exception of, among others,[2] the conservation of natural resources.

Suddenly, district governments were responsible for delivering public services, managing natural resources and raising local revenue. Uncertain how to proceed, most districts, where possible, started to exploit available resources, ostensibly to raise local revenue. A district timber regime (Barr *et al*. 2001) emerged, with local groups having the opportunity to capture profits from timber that had previously gone to the central government and concession holders selected by the centre (Wollenberg *et al*. 2006). As a result, in many of these areas rampant destructive exploitation occurred (*Kompas* 2000; *Kompas* 2001b). This period also saw a new wave of encroachment into conservation areas, and not all by people with customary claims. Often, as was the case in the Kutai National Park, these were land-hungry immigrants (*Kompas* 2001a). In 2005, it was reported that about half of the state forest (59.2 million hectares) had been degraded (*Kompas* 2005a), including 4.69 million hectares of conservation areas (*Kompas* 2005b).

For the Ministry of Forestry (MoF) decentralization proved to be a special challenge. The Ministry of Forestry had built its own empire run by a large centralized organization with offices in all provinces and districts, all accountable upwards to the minister. Paradoxically, the MoF was one of the first departments making attempts to decentralize, although only on affairs which were a drain on their budget. In 1998, for example, the MoF handed over to districts responsibilities over the part of the permanent forest estate designated as protected forest, as well as forestry activities outside the permanent forest estate, such as community forests, rehabilitation of degraded lands and bee keeping. Then, in 1999, districts were allowed to issue small 100-hectare timber-cutting permits to communities within the production forest that were meant to provide local people with their timber needs. In fact, most of the timber from these small-scale logging operations was used for commercial purposes. Ultimate control over decisions to designate forest, however, remained with the central government. The overall decentralization of 1999 clearly threatened this power. Whereas community forest management, co-management or devolution policies tried out since the 1980s had left control over critical decisions and benefits with the MoF (Edmunds & Wollenberg 2003) and targeted only selected areas and groups, decentralization created opportunities for forest users to engage in a broader realm of politics and

influence the state itself, including its historical domination over timber and forest land. Decentralization also uncoupled forest district agencies from the structure of the MoF and shifted it to the district government headed by the *bupati* (regent, or district head).

Throughout the uncertainty at the start of decentralization, the MoF based its decisions and policies on the Forestry Law 41 of 1999 (Menteri Kehutanan 1999). This law is a milestone in that for the first time, customary or *adat* rights were recognized (article 4(3); article 5 and article 67), and communities have the option of participating in forestry operations (articles 68, 69 and 70). However, the law also clearly states that whatever the management arrangements are, state forests remain under the authority of the central government. Even though *adat* rights might now be recognized on paper, realization in the field is still awaiting. Impatient of the slow movement of the law, many peoples claimed their rights by 'unrecognizing' the rights of the state or simply occupying state forest land. This has been strengthened by the attitude of district governments, which tend to see conservation as a low priority and national parks as a waste of potential resources.

Although in the later part of this first phase, the rate of exploitation decreased and local governments increased some control, the central government responded by explicitly taking back control over forest exploitation (Government Regulation 34, 2002). Indeed, a new decentralization law attempts to restructure decentralization with autonomy at the provincial rather than the district level. As is the case all over the world, government reacts to problems by trying to halt the process that is only just beginning (Ribot 2002). Meanwhile, nature conservation and national parks remained the responsibility of the central government through the MoF.

Hands off: conservation is (central) government business

> State forestry agencies have traditionally controlled land, trees, and labour to fulfil three custodial and productive functions as (1) a government land-lord, (2) a forest enterprise, and (3) a conservation institution. The custodial-productive agency is assigned to protect state property by guarding its territorial boundaries, protecting its capital goods and preserving the ideal environment for sustainable production. (Peluso 1922:27)

The first nature reserve in Indonesia was established in Depok near Jakarta in 1920 under Dutch Colonial Law (Mulyana 2002). Like the designation of forest areas, the designation of areas for conservation consisted of excluding

and removing local inhabitants. Local communities were prohibited to use, extract products from, or even enter these areas. It is probable that the term '*hutan tutupan*' or closed forest (to communities) originated from that time.

The Dutch Colonial government formalized forestry and nature conservation as a government task through a 1932 regulation renewed in 1941.[3] After independence Indonesia's government took over the task of forest governance, including conservation and protection of the nature reserves. As part of the state forest, conservation areas are controlled by the MoF, whereby the main strategy was excluding these areas from use. Despite high rates of conversion, deforestation and encroachment,[4] the state still claims to control about 120.4 million hectares, of which about 23.1 million hectares are designated as conservation area (MoF 2005).

At the same time, the realization of the fate of forest-dwelling communities was highlighted through the World Forestry Congress of 1978 in Jakarta, which focused on the theme 'Forests for People'. Not long after, the MoF started to experiment with participatory approaches. One early project in forestry was a Ford Foundation-funded social forestry programme located in the buffer zones of national parks. Around this time as well, a new law on spatial planning and a new development planning cycle was introduced where in theory local communities were required to participate in the process. Non-governmental organizations became the obvious mediators and facilitators for this 'bottom-up process'.

Over the next two decades, the social forestry programme was transformed into community development programmes in forest areas and subsumed under the management of production forest (Sardjono *et al.* 2000), where the tasks to invite and participate with communities fell to concession holders.

The decentralization law explicitly stated that conservation remained the responsibility of the central government. In other words, the MoF retained absolute control over the almost 30 million hectares of land. Conservation areas or protected areas are the last to hold off participation of local communities, and conservation was and remains the concern of the central government. However, to accommodate the needs of local communities the government created buffer zones where social forestry schemes could be implemented. More national parks were created, as these allowed zonation with different use levels. Originally an American concept, national parks were adopted in Indonesia in the 1980s. The first parks were 'upgraded' wildlife reserves: Ujung Kulon, in Banten; Gunung Gede-Pangrango, in West Java; Gunung Leuser, in Aceh; and Komodo, in Eastern Indonesia (Mulyana 2002). By 2002, there were 35 national parks and at last count there were 50 (Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam 2005).

The weakening of the central government due to the economic crisis and reform of 1998 caused loss of control over large areas of forests at the margins of the state. Large areas of production forest were occupied, either by local governments, local communities or (illegal) logging companies. National parks, as well, lost large areas due to illegal logging or occupation by communities. While losing de facto control, the MoF paradoxically established at least 30 new national parks in the last six years, and often without consulting local governments or communities. Since conservation is undisputedly still under the authority of the central government, the creation of new national parks in a situation of uncertainty might therefore be an attempt by the MoF to reassert control. More positively, as Wardojo and Masripatin (2002) have stated, national parks are considered the most strategic approach to protected-area management, as they can integrate demands for both conservation of biodiversity and social development, either through integrated conservation and development programmes or through establishing use zones providing sources of livelihood for local communities.

For local governments, however, the presence of national parks is particularly troublesome. In practical terms, national parks are outside their jurisdiction. Often this means, as in the case of the Kayan Mentarang National Park, 1.4 million hectares of the land (about half) within district boundaries is excluded from use. The value is not the district governments' to use and the land is not within their jurisdiction, but they are expected to help protect the park against illegal activities. The central government, meanwhile, exerts its authority through designating conservation areas, but is unable to provide funds for their protection and management. It is no wonder that some district governments either covertly allow illegal logging and encroachment or try to hold the park hostage: 'If we do not get compensation for timber not cut, we will allow logging in the park …'[5]

Hands on: a right or an obligation?

Local communities have generally been perceived as the main threat to conservation. Conventional conservation approaches were, therefore, mainly exclusion and, only if really necessary, the establishment of enclaves. With more and more conservation areas designated and local communities displaced, conflicts have become more serious. People living in and around forest areas, some 65 million (Fay & Sirait 2002), are amongst the poorest in the country.

Assuming that poverty drives communities to encroach on national park land, rural development projects were commenced targeting poor communities in and around nature reserves. In the 1990s, the World Bank and

Asian Development Bank started to fund large conservation projects, known as Integrated Conservation and Development Projects, at several parks in Indonesia.[6] The role of NGOs to initiate and run 'participatory' natural resource management schemes became an accepted part of these programmes. Today, almost all national parks have some aspect of their management done participatorily.

At the end of the 1990s, a renewed concern over poverty and rural livelihoods led international funding organizations to require involvement of NGOs in the implementation of rural development projects. Non-governmental organizations working with local communities to strengthen local capacity, improve strategies for action and facilitate communications, had already adopted participatory approaches such as participatory rural assessments, participatory action research and participatory mapping. In terms of forestry various types of participatory schemes emerged, from social forestry programmes as part of logging concessions to the development of traditional systems of natural-resource management.

However, implementing participation is no easy task. After all, in most cases the people who are now asked to participate have first been 'de-responsibled' (Onibon 2000) and dispossessed. Now these same people are asked to participate and become 'responsible' again. Also, the state, which had become accustomed to a simple top-down approach, has had to learn the actual meaning of participation. Indeed, the word 'participation' can mean many things to many people and is often misused. In Indonesia it is most often disguised as 'socialization', which is the third step up from manipulation through therapy in Arnstein's ladder of participation (Arnstein 1969) or what is also called passive participation, where people are merely being told what is going to happen (Pretty & Vodouhe 1997). Participation without some degree of decision-making power is not really participation.

Generally, attempts to manage parks to include uses by local communities are more likely to succeed if the users support the management plans. Users are much more likely to support management plans if the plans take account of their economic needs. And this is much more likely when users have had a significant role in the development of the management plans. However, while most participatory approaches are based on the notion of resources being essentially state property, it is essential that some rights of communities are recognized. After all, being rational human beings, community members are unlikely to invest labour and resources in sustainable management without some guarantee that they or their descendants will receive its benefits. Indeed, it has been shown that farmers and peasants are sceptical of government programmes that provide them with only limited tenure (Lynch & Talbott

1995). And this is where the problem lies. Up to the present, the government (the MoF) is not willing to even discuss alternative tenurial arrangements. The mentioned decrees explicitly state that the collaborative efforts do not change the status of the forest and that all activities must occur under the 'guidance' of government agencies in charge of the forests or national parks. Communities can participate and in some cases have limited use rights, but forest areas and nature reserves remain under the control of the state. Communities have little real decision-making power.

With 'participation' written into the law, field staff often considers participation an obligation. As a result, one of the most common problems reported with regard to the failure of park protection is 'lack of participation'. In fact, the government remain the 'ultimate arbiter of national goods' (Lynch & Harwell 2002), and participatory approaches seem to shift the burden of conservation towards local communities, whereby local communities are blamed for failure to be responsible, but have no rights to refuse to be involved nor do they gain any real benefits from the involvement.

Despite the reservations that local communities and NGOs might have, there have been several attempts to institute participative efforts to manage national parks:

1. Kutai National Park (East Kalimantan). The park agency has established *Mitra Kutai* (Friends of Kutai), which is a forum of large companies interested in starting economic activities with people around the park.[7]
2. Kerinci Seblat National Park (Jambi, Sumatra). An integrated conservation and development project led by WWF involving NGOs, funding agencies, government and local communities. Non-governmental organizations facilitated local communities in drafting development plans, which included a village conservation agreement.[8] To implement the plans and agreements, communities were given block grants.
3. Kayan Mentarang National Park (East Kalimantan). The World Wide Fund for Nature with funds from the International Timber Trade Organization (ITTO) attempted to design a management plan through participatory approaches. Communities participated through an alliance (FoMMA), which together with representatives from central and local government formed a policy board formalized by ministerial decree (RECOFTC E-News 2003.14; http://www.wwf.or.id/).
4. Laiwanggi Wanggameti National Park (Sumba, Eastern Indonesia). A local NGO was involved in conflict mediation to solve the problem of community land included in the park. After a long process, local

communities reached an agreement to conserve the area[9] and set up a collaborative monitoring system.

National parks legally allow participatory management and/or different uses by non-government parties. In addition, often areas lying outside the park boundaries may be assigned buffer zone status where human activity and resource utilization are permitted (Wardojo & Masripatin 2002). However, participation without policy change is not enough. For example, in Kayan Mentarang the WWF with about ten customary communities raised the issue of tenure. The designation as state land (nature reserve) had abolished customary tenure, but as the state is distant without specific control, the park became virtually open access, where local communities had no rights to exclude others from entering and making use of the resources in the park. So far the park has been saved from encroachment and illegal logging because of its remote and isolated location in the hinterland of East Kalimantan. Decentralization and the establishment of the district Malinau has made the area in which the park lies more accessible, including for logging and other uses. The district is subsidizing air travel to the hinterland and is building a road along its boundary. The World Wide Fund for Nature Kayan Mentarang project focused on ways to show and legitimize *adat* (customary) claims and *adat* rights using participatory mapping techniques, qualitative assessment of local institutions' needs and potentials, and documentation of *adat* regulations regarding the use of land and management of natural resources. Facilitated by the WWF, the ten communities claiming rights in the park reached an agreement on the extent of their territories and how best to manage them. However, the recommendation to have community reserves (*tana olen*) formally recognized fell on deaf ears (Eghenter & Labo 2003). Instead, the central government required a formal written management plan and a map of the park's zonation. As this was beyond the capabilities of the communities or even the policy boards, no further developments occurred, and communities still have no legal rights.

In Laiwanggi Wanggameti, one of the issues was how communities are represented in direct participation. When the monitoring team was to be selected, meetings were held and several individuals were selected. Further selection was done through workshop training sessions and at the end four people were selected. This raised an overall protest where people demanded that all should be accepted or none at all. In the villagers' perception, the rejection of some was felt as a rejection of all. In the end, all were accepted as members of the monitoring team, even though lack of skills might hamper the actual work (Mulyana, unpublished data).

One general problem with activities for a long-term conservation project is that often there is a lack of activities directly linked to people's livelihood. Often delivery of block grants is thought to provide for this. In the case of Kerinci-Seblat, block grants are given on the condition that communities design a solid plan, which includes an agreement and plans for conservation of the park. Unfortunately, communities lack understanding and capacity to draft a management plan. Following government development projects, communities ask for physical infrastructure rather than, for example, support for marketing products or schooling.

In addition to these formal projects there are cases of communities that have taken the initiative to conserve, while not explicitly for biodiversity, at least the natural forest. The village of Setulang in Malinau district is one such case. At a time when other communities sold rights to cut timber to local companies, Setulang held on to its forest. They established a village forest reserve and set up a village management body (Iwan 2004). What made Setulang different? It is ethnically homogenous with high solidarity. Most importantly, they have a rice production surplus and are thus less dependent on forest products. In addition, an incident with the logging company spurred the different factions of the village to make the decision to conserve the forest.

Hands on or hands off: limits and constraints to participation

Holt (2005) summarized the requirements for the rise of conservation awareness as the need to recognize that the resource is becoming scarce, that exploitation will have a deleterious effect, that the resource is important to survival and well-being, and that users have the capability to regulate use such that overexploitation can be remedied. So far, these requirements are only partially fulfilled and conservation, whether conventional or through community participation, has shown a remarkable lack of success. The central government is not able to guard the large areas it earmarked for conservation. Local governments have no mandate and local communities gain no benefits.

So, whose task should conservation be? Should local communities be in charge? Many NGOs promote the myth of *adat* communities living in harmony with nature and applying traditional systems of natural resource management.[10] The state system of parks and conservation areas is to be seen as a crime against humanity, whereby land is alienated and people are prevented from fulfilling their needs. Parks will therefore be much better managed when local or *adat* communities are in charge, they say.

But why would a community participate? What is the benefit to communities to participate in national park management where the goal is biodiversity conservation for the common good? Why would communities participate since this is a long-term and abstract goal which benefits a public 'out there', not a short-term goal of immediate use to the community?

Not only local communities but district governments have trouble with this concept. In the district of Malinau (East Kalimantan) and Kerinci (Jambi, Sumatra) more than half of the area is designated as conservation area. The district governments have several times pointed out the high revenue they could obtain by logging the parks, while keeping them as conservation areas is of no benefit to them or to the local communities. People say, if the world wants conservation areas let them pay us compensation for maintaining the parks and not selling their timber. Indeed, at a recent meeting in Laiwanggi Wanggameti (Sumba) the issue of compensation by downstream users of water to upstream keepers of the forest was hotly discussed.

Economic benefits to communities should be a consideration in any kind of participatory scheme. Conservation goals might be combined with the use of the area for tourism and/or management for environmental services. Even timber extraction when done well could be made compatible with conservation.

While payment for environmental services might be a long-term reason for participation, sometimes more ulterior motives lead to participation. For example, in Laiwanggi Wanggameti, participating communities were allowed to retain their use rights to the land while non-participating communities were excluded and relocated. In Kayan Mentarang, participation means that the participating communities would be supported in their conflict against another party, and in Kerinci Seblat, participation was rewarded by being given block grants.

John MacKinnon[11] also questions the motives of communities to participate in conservation. Apart from probably having a more economical way of using the area, local communities might not have the interest. He further criticizes the common belief that if we can raise the standard of living, local communities no longer need to exploit natural resources and the area can be protected more effectively. In fact, the more 'developed' people are the greater their needs. As Holt (2005), referred to above, concludes, the conditions under which people are seen as ecologically friendly (low population, low resource use, subsistence production) are conditions under which we would not expect conservation awareness to develop. On the other hand, when people might feel the need for conservation due to a 'developed' lifestyle with market oriented production, they themselves and their 'consumer lifestyles' become obstacles to conservation.

Although the way natural resources are controlled by the state is much criticized, ultimately the government must be responsible for conservation. After all, isn't the state created in order to protect the common good and prevent the 'tragedy of the commons' of certain groups gaining disproportionate benefits at the expense of others? However, the government is clearly not able to do this alone. Some sort of compromise for collaborative arrangement is needed. However, any collaborative arrangement requires a common understanding on issues, such as the meaning of participation and collaboration, as well as degrees of participation. In addition, such arrangements need to consider who is participating with whom, as well as what kinds of rules are needed.

In Indonesia, collaborative management has been recently instituted through a ministerial decree (Ministry of Forestry 2004).[12] The decree describes collaboration in the management of nature conservation areas as 'the implementation of an activity or handling a problem in order to improve the effectiveness of management by parties (stakeholders) working in cooperation and synergy based on common understanding, agreements in line with existing law' (article 1 point 3, Ministry of Forestry 2004). Participation is defined as activities based on interest, concern, and need, done voluntarily in support of the goals of the national park.

Although I use the two terms interchangeably, participation implies cooperation of different parties in an activity not necessarily by their own design. Collaboration on the other hand implies a sharing of task and responsibility but also a sharing in decision–making, most importantly a sharing in goal–setting. Co-management is based on fair sharing of management functions, entitlements and responsibility (Borrini-Feyerabend *et al.* 2000), as well as the sharing of power (Carlson & Berkes 2005).

In practice, there is actually no sharing of power or decision–making, and the common goals might not be common. Both participation and collaboration are part of the government discourse, but have become divorced from their real meaning. For many government officials, informing local communities is already participation. In the language of officials this 'socialization'[13] provides public input and prepares communities for project implementation; as Mosse (2001) also found, participatory rural assessment was carried out but not actually used in planning.

At the same time, local authorities are tied to regulations issued by the central government. As stated before, in Indonesia, despite decentralization, decision–making on conservation is with the centre. In order to implement participatory approaches, local authorities need discretionary powers to adapt, act and react efficiently (Ribot 2002) and pass this on to communities.

Although seldom fully implemented, participation, like decentralization, is thought to be a good thing. Because it is good, the more powerful parties, such as the government or NGOs, assume that communities want to participate. In the field, NGOs clearly work only with willing communities, but in many government projects it is clear that communities are unwilling to participate. In the typical behaviour of the weak they do not refuse openly but simply do not do it (Scott 1985).

In Arnstein's ladder of participation (Arnstein 1969), collaboration is seen as the highest level of participation where all parties have an equal voice in setting the agenda. Participation is a necessity to achieve collaboration, but is it necessary for all parties to participate in an equal manner? If local communities participate by abstaining from exploitation of the national park, or following certain rules for exploitation, is this co-management?

Participation can also be identified along a continuum from passive participation to self–mobilization (Pretty & Vodouhe 1997) or in other words as a continuum of relationship between the state and local communities in natural–resource management. At one extreme is the top-down, centralized, state–dominated approach and at the other end community management where the community has full autonomy. In the middle are the participatory and co-management approaches. Participatory approaches also follow a continuum from situations where communities merely receive information, through consultation, cooperation and communication, to the setting up of joint consultative councils (Onibon 2000; Carter 1996; Pretty & Vodouhe 1997) and gradual increase in decision–making power. Thus, the degree of participation can be set at any point along this continuum according to specific needs and abilities. Identifying and understanding the participating parties is, therefore, no less important.

Collaborative management of national parks typically involves several parties, at least government agencies and local communities. Often NGOs are involved and sometimes private companies. In Indonesia several national park management efforts were initiated by international organizations as well (see Chapter 14). All of these parties not only have their own interests, but they often speak different languages and live in different realities. They also have different faces not visible in any formal arrangement (Carlsson & Berkes 2005), while each party itself might not be homogenous.

For example, the modern state is typically fragmented, and separate entities might have a number of relations to different communities (Carlsson & Berkes 2005). National park management in Indonesia is the concern of the central government, but local communities have more contact with local governments. As shown earlier, local and central governments do not necessarily share the

same interests. In addition, different sectoral agencies operate at the village level and similar to central level agencies, district level agencies have to compete for a share of the budget. Coordination is therefore an eternal problem. National parks are formally managed by the Nature Conservation Agency (BKSDA) and directly accountable to the central government. In working with communities, BKSDA is supposed to involve the district government through the planning board, its agency for community empowerment and the village head, and should be coordinated with local development activities. But, as research on decentralization has shown, actual participation and collaboration among government agencies is minimal and competition is the norm (McGrath *et al.* 2005).

Neither are communities homogenous units, nor do all members have the same interests and goals. Communities are constantly changing; they are described by Carlsson and Berkes (2005) as multidimensional, cross-scale political units with unpredictable behaviour. Although this fact is a common theme in much of the literature on co-management, there is still not sufficient attention paid to local and community politics (Mahanty & Russell 2002) or the different interests within a community. In Indonesia, participation is expected to be channelled through the village head. However, often the real leader is the customary leader and village heads might not always have the best interest of communities at heart. Many customary communities, e.g. in Sumba, have a clear division between the nobility, free people and slaves, each with their own interests and goals.

It is also often not practical to involve all stakeholders at the same time. As Ribot (2002) states: 'institutional plurality is important, but unmediated by representation it may serve only the best organized and most powerful'. It is therefore best to have the management carried out by elected bodies. In Indonesia, such elected bodies are a common aspect of collaborative arrangements for the management of national parks. Friends of Kutai for the Kutai National Park, the Policy Board of the Kayan Mentarang National Park, and the Group to Save the Forest in the Laiwanggi Wanggameti National Park are a few examples. However, it is not always clear that these groups are accountable to their constituency and not to the donors.

A typical third party in collaborative arrangements is NGOs. Involvement of NGOs has almost become a requirement for any participatory management scheme. Indeed it is generally recognized and accepted that NGOs have and are still playing an important role in participatory management of natural–resources. At the national and international level, NGOs have been the main promoter of participatory approaches resulting in participation accepted as a general approach to natural-resource management and conservation. At the

local level, NGOs have carried out the actual facilitation for participation and provided a bridge between communities and other parties. Over time, governments have started to trust NGOs and in some cases have even requested NGO support to establish collaborative management schemes with communities.

With decentralization, a weakening government and a more empowered community, NGOs have come to be in both a powerful and a weak position: powerful in that they have become the main conduit of communication between communities and governments, weak in that their position might be politicized by the now powerful local elite.

While NGOs have proven their worth in many natural–resource co-management schemes, participation of NGOs also has some problems. Although not all NGOs are the same and international NGOs might be more accountable than some national or local ones, generally NGOs often tend to claim exclusive territories and communities in competition with each other. Certain communities and areas become linked to a particular NGO or organization to the exclusion of others. In Laiwanggi Wanggameti, community members working with one NGO in forest conservation were excluded from working with another NGO to improve the marketing of their agricultural products. Although there are many NGOs linked in consortia and alliances, in the field NGOs seldom cooperate. For example, the WWF and CIFOR are both working in the district of Malinau in areas around the Kayan Mentarang National Park, but they have difficulty in finding common ground for cooperation.

For many NGOs, participation has often become an end in itself. Participatory action research, participatory rapid appraisal and participatory mapping are standard tools in the facilitation of rural development, often to the exclusion of other approaches and often forgetting the final goal of empowering communities to do conservation. Because of this, NGOs have difficulties in phasing out and handing over activities to the communities. Collaborative monitoring in Sumba is one example. When the community felt the need for another monitoring exercise they consulted with the NGO on how to proceed. Rather than telling the community to go ahead and that the NGO would provide support as needed, the community was told to wait until the NGO was ready (Mulyana, personal communication[14]).

In nature conservation and national park management, the government is relying heavily on formal regulations. However, often regulations are made hastily in an ad hoc manner without thought about their consequences, in particular the consequences to local communities. Hence this results in regulations that are not very realistic and cannot be enforced. Furthermore, the government seldom bothers to inform the public sufficiently. Many national

parks have been established without consulting or even informing local communities or even local governments.

Indeed, what is worse is that the government itself often breaks its own policies. Management plans are never followed, roads are built in conservation areas (see Chapter 27), mining is allowed in conservation areas, all sanctioned by the government. In some cases, production forests were incorporated into national parks, which seems to contradict the purpose of a national park and a protected area.

An example is the expansion of the Halimun-Salak National Park to include parts of a production forest managed by the state forest company. The company had, in accordance with the requirement for community involvement, started a participatory management scheme providing significant benefits to local people. When the central government took control over the area and declared it part of the national park, the participatory management scheme was abandoned.

Despite evidence that regulations are not enough, the government is trying to create participatory management through formal regulations. Law 41 (Menteri Kehutanan 1999) clearly states that communities have the duty to be involved in protecting forest areas (article 69), and in 2004 two ministerial decrees on participation were issued. The first (p.01) deals with empowerment of local communities in social forestry, whereby local communities are given the opportunity to manage forests to 'improve their welfare and realize forest sustainability'. The second (p.16) deals with collaboration of local communities in nature conservation. Collaboration is seen as parties (implicitly this is the community, government and possibly others) agreeing to collaborate. The regulation also sets out the steps of collaboration: preparation, implementation, monitoring and evaluation.

But then what use are regulations of which communities are ignorant? And if the government thinks participation is truly important, why such a limited ministerial decree and not a more legally binding government regulation?[15]

Neither do formal institutions guarantee real participation. Law 41 (Menteri Kehutanan 1999) on forestry states that state and private companies licensed to utilize state forest areas for environmental services have to support economic development of local communities through collaboration with community cooperatives. Community cooperatives, if existing, are usually weak and badly managed. Often, as well, cooperatives are quickly established to be able to get a share in a specific project. This emphasis on collaborating with a formal institution is often a hindrance in effective cooperation and community support. Cooperatives are seldom representing communities and, as in the case of community cooperatives in Papua, are often dominated by the elite (Asih 2005).

So what is the alternative?

The failure of collaborative approaches has led to a resurgence of protectionists advocating a return to strict nature protection and exclusion of people from ecologically fragile areas (Holt 2005). While such an approach might indeed succeed in conserving biodiversity in a specific area, its implementation is not possible in Indonesia where, as mentioned earlier, some 65 million people are dependent on forest resources.

For conservation, then, collaboration and participation are not options, they are necessities. The government might have the formal power, but de facto, national parks are managed (or not managed) by the people living in and around the park. Communities that have no legal rights, even if willing, are not able to protect the park against encroachment by outsiders. Private companies might be willing to manage a park, if profit is involved, but even they have to deal with local communities.

For conservation purposes, in particular, the government is needed to set a general management policy setting guidelines for permissible and non-permissible activities and ensuring that society as a whole abides by these rules.

However, rules alone are not sufficient for co-management to work. There needs to be a fair (not necessarily equal) sharing of power and decision–making (Borrini-Feyerabend *et al.* 2000), flexible approaches to allow for a continuous problem-solving process (Carlsson & Berkes 2005) and the opportunity for conflicts among different stakeholders to be approached through negotiation (Leeuwis 2000).

In addition there is need for:

1. A general policy framework, for example a land use/spatial plan, which should become the basis for all sectoral policies. The general policy must cover, among others, watershed management, conservation areas and corridors, and clear criteria and indicators for designating conservation areas. In other words, conservation areas must be managed within the totality of the landscape.
2. Conservation and its management should be an integral part of the natural–resource management system, not a separate programme.
3. Defining the appropriate level of decision–making and sharing of rights, responsibilities and benefits among stakeholders.
4. The government needs to take a role in establishing the regulatory framework, ensuring its enforcement and protecting the rights of local communities through providing legal security of tenure.

5. Communities need to take a role in nature conservation according to their capability within an agreed upon framework.

Conclusion and summary

Decentralization in Indonesia has weakened the MoF, but despite the high level of discourse at national level, the paradigm of forest management and conservation as a central state concern has not changed. The establishment of national parks is more a sign of a power struggle than concern for conservation, since the government lacks the capability to protect these areas.

As protection and management of the 50 national parks in Indonesia is beyond the capacity of the central government, participatory and or collaborative approaches involving local government and local people are a necessity. Such approaches will not succeed, however, when local conditions and situations are not taken into account, and when the local stakeholders are not given the rights and responsibilities that are associated with making decisions.

In any scheme it should be clear who is participating with whom for what. Who gets the benefits, who is responsible? What are the roles? Power relations and social structure need to be considered and approaches designed accordingly. Guidelines setting a limit to what can and what cannot be done must be explicit and must be communicated to all concerned, including possible approaches for negotiation and conflict management.

The bottom line is that people are willing to participate and collaborate if it is clearly to their benefit. To this end a structure of incentives and disincentives must be in place. However, not all national parks can and should be managed by local people. It should not be an obligation, but a right.

Finally, the multiple interests involved in forests and forest resources require some common rules where the government can and should play a role. The government's role in conservation should be balanced with the role of local communities, investors and the protection of public interest. A core government function should be the establishment (and enforcement) of criteria and standards for the minimum area required, for rational biodiversity conservation and landscape protection, and conditions for different kinds of use compatible with conservation and their associated responsibilities. Other roles and functions, such as methods and techniques for managing conservation areas, should be given to those parties with use rights, including private contractors and communities. This, however, requires the basic prerequisite that rights and responsibilities of all parties are clearly defined, recognized and protected by law.

End notes

1. Indonesia is divided into provinces and provinces into districts where the district head (regent) is accountable to the provincial governor, who is in turn accountable to the Minister of the Interior. With a 1979 law, villages were incorporated into this structure and a system set up where central government directives would be passed on to village level. All government decisions were made at the centre.
2. The exceptions being foreign affairs, security, justice, monetary and fiscal affairs, religion and others, which includes conservation.
3. Natuur Monumenten en Wild Reservaten Ordonantie 1932; Natuur beschermings Ordonantie 1941.
4. Deforestation rates vary from 1.1 million ha per annum to 2.8 million ha. (*Kompas* 2005a)
5. This was said as a joke but with serious undertones on several occasions by officials in Malinau with regard to the high value of timber in the Kayan Mentarang National Park.
6. Such as the Ruteng Recreation Park, discussed by Erb and Jelahut (Chapter 16).
7. http://www.tn-kutai.or.id/Indonesia.htm
8. http://www.kerinci.org/id/icdp.html
9. http://www.sinarharapan.co.id/berita/0405/12/ipt02.html
10. See also Majors (Chapter 17) arguing against this 'myth'.
11. Director, ASEAN Regional Center for Biodiversity Conservation, Professor of Biodiversity Information, DICE, Kent; Adjunct Associate Professor, School of Life Sciences, University of Queensland.
12. The question of who collaborates has been touched on by Affif and Lowe (Chapter 12), and Gustave and Borchers (Chapter 14) give an example of one such 'collaborative' effort, which has been widely criticized.
13. Socialization is a term much used in government speak to describe the act of informing people of government policy of projects. Often socialization is seen as participation and as such does not need extra effort by officials or follow–up.
14. Agus Mulyana worked with several NGOs facilitating community monitoring in Laiwanggi Wanggameti National Park during the early 1990s.
15. According to the legal system of Indonesia, a government regulation is a law passed by parliament while a ministerial decree should be a more specific directive to implement the government regulation. In practice, a ministerial decree is often a quick stop-gap, as it does not need to be discussed by parliament and can be issued merely by the signature of the minister.

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14

Conservation and conflict in Komodo National Park

RUDDY GUSTAVE AND HENNING BORCHERS

Introduction

The preservation of natural areas was historically informed by the early environmentalism that led to the establishment of the world's first national parks in the late nineteenth century. These parks propagated a strict human–nature dichotomy as epitomized by the 'Yellowstone model' (Stevens 1997:285), calling for the eviction of resident communities to create areas of pristine wilderness. This model of nature conservation was adopted throughout the Western world and, by way of colonization, globally. Subsequent access and resource-use restrictions deprived communities of their livelihoods, while little was offered in terms of compensation or suitable alternatives. As a consequence many conservation areas are highly contested, harbouring long-lasting – and sometimes violent – conflicts between governments and conservationists on one side, and resource users and resident communities on the other.

With an increasing awareness of this dilemma, the global conservation discourse has undergone a prolonged shift since the 1970s. Alongside the main concern of environmental preservation, social justice emerged as an equally important piece of the puzzle of managing the world's conservation areas. This shift is by now well institutionalized both at a national and an international policy level. The principles laid out in the Convention on Biological Diversity (CBD 1992) are among the most prominent and influential guidelines

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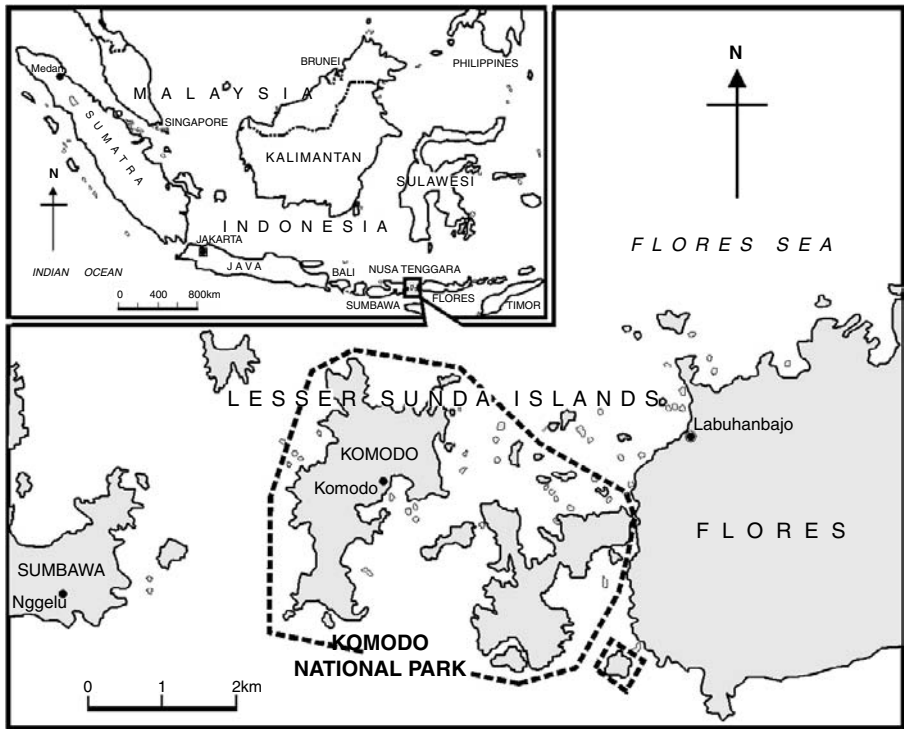

Figure 14.1. Komodo National Park.

in shaping current conservation discourse. Alongside the objective of the conservation of biological diversity, the convention prioritizes sustainable use and benefit-sharing of natural resources, with an emphasis on the role played by local communities.[1] Multilateral development agencies and globally operating environmental non-governmental organizations (NGOs) alike have incorporated these principles into their programmes. Accordingly, resident communities and resource users should now play a pivotal role in conservation management.

In reality, however, such policy directives do not always translate into a more socially responsible approach to conservation. Government officials and conservation practitioners often hesitate surrendering too high a level of control to resident communities, which would in effect curtail their control over decision-making. Thus, while in theory the principles expressed in the Convention on Biological Diversity manifest themselves in the project planning documents of almost every present-day conservation programme, many communities still struggle for their economic, social and cultural rights.

Komodo National Park (Fig. 14.1) in eastern Indonesia is a telling example of how global objectives in conservation can clash with local realities. The involvement of The Nature Conservancy (TNC), an international environmental

organization, in the management of the park has intensified a historical conflict between park managers and fishing communities. With restrictions on resource use inhibiting residents within and surrounding the park from meeting their livelihood needs, the promise of active participation and self-determination in the management of the park remains a theoretical concession to bridging the human–nature dichotomy and accounting for the livelihood needs of local residents. With the recent approval of a tourism concession held by a joint venture between TNC and an Indonesian tourism operator, the Komodo controversy has reached another level, as the privatization of Komodo National Park sets a worrying precedent for the future of conservation management in Indonesia and beyond.

Conservation in the Indonesian context

Conservation and development planning in Indonesia has by and large been defined in a top-down manner, giving little, if any, voice to resident communities. In the contemporary climate of decentralization and democratization, however, the legitimacy of the state forest regime, including the country's protected areas, is increasingly put into question. Along with the devolution of decision-making power and control to the regional and local level, the involvement of local communities and multistakeholder participation in environmental planning and management is becoming ever more institutionalized (Ministry of Forestry 2001).

However, although the political culture of Indonesia is moving towards decentralization of power and the devolution of more autonomy to the regions, the country's bureaucratic structure and hierarchy with its institutional and political legacies is likely to determine conservation and development planning for some time to come. Moreover, government-operated conservation areas in Indonesia are drastically underfinanced, making it impossible to adequately implement policies that at least attempt to do justice to the principles outlined in the Convention on Biological Diversity, which Indonesia ratified in 1992.

Several recurrent problems mark the dilemma of conservation-area management in Indonesia. The lack of adequate funding has led to many national parks being operated on a minimum budget, often even failing to pay their staff. The inefficiency with which regulations on resource and land use are enforced even questions the conservation status bestowed upon the area, evoking the image of 'paper parks'. Inadequate infrastructure and low levels of education and training of staff add to weak management structures. Most complex, however, are ongoing disputes with local communities, many of

which have been marginalized without the provision of suitable alternatives or even any influence on and participation in the decisions that determined and changed their lives (see Wiratno *et al*. 2004). Disputes between national park management and resident communities are rampant throughout Indonesia. Among the most prominent cases are the national parks of Bali Barat, Wakatobi and Lore Lindu in Sulawesi; Merapi and Halimun in Java; Kerinci Seblat and Leuser Ecosystem in Sumatra; and Komodo in Eastern Indonesia.

Community rights to manage or co-manage natural resources in national parks remained limited after the fall of Suharto's 'New Order' regime and the rise of *reformasi*. A willingness on the part of policy-makers to consider increased self-determination and participation at the local level was not followed by the political will to genuinely implement these measures. However, the dire financial situation of the government and subsequent inadequate conservation funding eventually attracted a global conservation community that considers Indonesia to be among the most biologically diverse countries. With the government prioritizing numerous other predicaments, biodiversity conservation soon became the domain of international actors. Both foreign governments and global NGOs share an interest in preserving Indonesia's rich natural heritage. Indeed, environmental NGOs are among the main actors involved internationally in the conservation and protection of biological diversity, thereby 'addressing the problems of a shrinking and environmentally threatened global commons' (Meyer 1997). By way of their involvement, internationally agreed upon standards have been further institutionalized in Indonesia's environmental policies and, some may argue, practice. Thus, according to the Global Environmental Facility (2000:9), '[empowering] local communities and governments to better conserve, sustainably utilize and benefit from biodiversity is becoming increasingly important in Indonesia in the new era of economic hardship, political democracy and decentralization'.

Numerous conservation projects currently underway in Indonesia are to a large extent financed by international donors who cooperate with the PHKA (*Dirjen Perlindungan Hutan dan Konservasi Alam*),[2] the agency responsible for protected area management. The agency and its local counterparts receive not only financial support from international donors, but also scientific expertise, infrastructural support and capacity building. These are equally important because they have the long-term effect of training local staff and improving overall management. As the example of Komodo National Park (KNP) shows, however, the involvement of international actors may well further entrench conflict with resident communities instead of abating it.

Komodo National Park

Komodo National Park and the issues underlying its management are extraordinary in several instances. Located in eastern Indonesia's Manggarai Barat regency (or district), KNP is one of Indonesia's first five national parks, which were established in 1980, and is considered the flagship of Indonesian national parks. The islands within the park received early international attention for accommodating the Komodo monitor, locally known as *ora*, the world's largest living lizard, which had been protected by legislation as early as 1915. Komodo National Park received the status of both a Biosphere Reserve and a World Heritage Site, and is within one of the world's 34 biodiversity hotspots (see Chapter 1). International organizations and agencies, such as the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the World Bank, the Global Environmental Facility and The Nature Conservancy (TNC) have all been, or still are, involved in conservation efforts in the management of the park.

Since its designation as a national park, fishing communities living within the park, with a population of around 4000, have been increasingly marginalized and their resource-use rights curtailed. While the integration into a global cash economy transformed the local economy, the main potential source of cash income – the utilization and extraction of the park's marine resources – was progressively more constrained, increasingly affecting the subsistence level of local communities (see Hitchcock 1993; Walpole & Goodwin 2000; Borchers 2004). Although tourism became a major industry in the region during the late 1980s and the 1990s, communities within the park did not benefit from this development; the industry remains strongest in Labuan Bajo, the gateway town to the park on Flores. Nonetheless, most of the benefits generated through tourism flow out of the regional economy to larger national or international tourism operators (Walpole & Goodwin 2000). To date, the majority of the people living within the park – 97% – continue to rely on marine resource use as their only source of income (PKA & TNC 2000:15). Restrictions on access to resources, the rising cost of living, a growing population and the lack of sustainable livelihood alternatives have increased the pressure on resources and made life more difficult for the park's residents. Also, destructive fishing practices, still being used predominantly by non-park inhabitants, have affected the resources available (PKA & TNC 2000:5).

In 1995, the national conservation agency, *Perlindungan dan Konservasi Alam* (PKA), and TNC initiated the planning process for the KNP management initiative, with substantial financial support from TNC and other funding bodies, such as the Global Environmental Facility. The main objective of the initiative

was to establish a terrestrial and marine reserve in KNP for the conservation of the park's biodiversity and the full protection of natural communities, species and the terrestrial, coastal and marine ecosystems (PKA & TNC 2000:11). The PKA and TNC proposed a 25-year management Master Plan, which was endorsed in 2000 (PKA & TNC 2000). Therein, the concept of collaborative management, or co-management, was considered the most appropriate approach to park management. No preliminary research indicated whether communities in the park wanted such a scheme in the first place, or what form power sharing would take. Acceptance of the scheme was considered a given. To this day, park management struggles to '[introduce] the community to the [Komodo Collaborative Management Initiative]' (TNC 2003:33). Local residents, whose rights have historically been infringed, proved reluctant to enter into a 'partnership' model that was imposed in a top-down fashion, and where economic benefits and sharing of power are all but guaranteed.

The Komodo Collaborative Management Initiative (KCMI)

A key component of the 25-year management plan was the proposal to establish a joint venture between TNC and the tourism company Jaytasha Putrinda Indo (JPU) as the park's management body. This alliance, eventually set up as P.T. Putri Naga Komodo (PNK), is meant to combine TNC's scientific expertise with JPU's know-how in the tourism industry, in an effort to develop largely marine-based ecotourism in the park as a future financing mechanism. Conservationists consider ecotourism as the most sustainable and suitable use of natural resources, and as a way to make protected areas 'pay for themselves' through user fees and concessions. In order to effectively implement proposed management structures, PNK applied for a 30-year concession to manage the park and develop tourism infrastructure in the region.

The management plan and tourism concession, however, caused an ongoing controversy, as many stakeholders – most notably local fishing communities and entrepreneurs – complained they were not part of the decision-making process that would ultimately determine their lives. Numerous local community groups, entrepreneurs as well as the majority of the local legislative body, rejected the proposal, arguing that they were sidelined in the design of the management structure. Indeed, critics accused TNC and the government of having made important policy decisions through 'backroom deals' (Dhume 2002:51), and it has been claimed that TNC works together with corrupt government officials who are not concerned with village communities (Erb 2001:84). In fact, in 2001, without consultation with fishing communities, and

without explaining the impending changes, the regency government passed regional regulation no. 11, banning almost all types of equipment that fishermen normally used, and putting in place various other zoning regulations that restricted the movements of fishermen. In interviews with local communities, it became apparent that the national park was run like a state within a state. In order to receive a fishing pass on any given day, fishermen would have to travel to the island of Komodo, where the security post was located, which entailed for some island communities a round trip as long as six hours; by the time they returned from the journey, currents and tides would have changed, and their fishing opportunities often lost. The extra fuel needed to make this journey was also cutting into their already limited profits. Many other regulations restricted what they could do in their villages, and who could come to live there. In-marrying spouses were not allowed rights to land, restrictions were placed on water use, on building fires, on use of fertilizers, water and waste disposal, and on keeping domestic animals.

What was most keenly felt by the fishing communities living in and near the park was the increasing patrolling activities of the TNC and TNK security teams. What made things worse was an incident in November 2002 that involved two fishermen who were shot dead by park patrols. This not only generated violent protests at the local level, but it further initiated an investigation into management practice in KNP by national NGOs, such as the environmental forum WALHI and the human rights organization Kontras. These investigations helped to expose the disagreements and the conflicts between the park management and community groups (see *Down to Earth* 2003). Along with cooperation from the national park authority,[3] TNC, however, managed to secure support for their proposal by several regional officials in Manggarai regency and local community leaders in Labuan Bajo. The concession was eventually approved in 2004, though it was not until 2005 that the decision was made public. Local communities within and surrounding the park, as well as a majority of the local legislative body, continue to reject and criticize the decision, as well as TNC's exclusive management practice.

The Nature Conservancy, in particular, continues to be under fire for restricting access to resources fishing communities rely upon for their livelihoods, and for the inadequate approach taken towards the involvement of resident communities in the planning process and management of the park. Although the authors of the management plan had suggested co-management as the ideal structure for managing the park, they stopped short of realizing the potential a collaborative approach entails. At least on paper, community participation was from the beginning a key component of this model, as a means of establishing a consensus on the park's management principles. Project planners

indeed acknowledged that participation of resource users in the design and implementation of the management plan is crucial for KNP's sustainability (PKA & TNC 2000:63).

According to the Global Environmental Facility, a major source of funding for the co-management initiative, '[the] project […] focuses on conservation and sustainable use […] and supports the active involvement of local communities *as managers and beneficiaries* of better biodiversity management' by means of 'supporting barrier removal by promoting new management models that develop partnerships between local government, private sector, NGOs and local communities' (GEF 2000:9, emphasis added). In reality, however, local communities are merely granted the opportunity to provide 'additional input' to management decisions (IFC 2001:2; Shurcliff 2001:14). The final decision-making process continues to rest with dominant stakeholders, the national park authority and, above all, TNC. Several staff of the national park authority indeed suggested that, although according to the MoU TNC was only meant to assist in park management, the NGO had in fact appropriated the decision-making process and had thus undermined the authority of the government agency.

According to the proposed management structure, local residents, or their representatives, are unlikely to have much influence on the decision-making process. The management structure of the KCMI will involve a co-management board with representatives of PNK as the ultimate decision-making body. An advisory committee including representatives from the national park authority and local government will have some level of influence and input on decision-making. Lastly, a consultative committee of approximately 30 members, including community representatives, is proposed as the forum through which resident communities can partake in park management. Three members of this consultative committee will also be on the advisory committee. As such, communities will indeed only be in a position to give 'additional input' with no guarantee that this input actually informs management decisions. The KCMI instead suggests relying on consultation mechanisms as a means of community participation.[4]

Consultation, however, can only be considered a low to medium level of participation, as opposed to shared decision-making and interactive participation, deemed integral aspects of a co-management approach to conservation (Ingles *et al.* 1999:5; Campbell 2000; Salm & Clark 2000:67). Consultation is a 'modified top-down interventionist' approach, where '[…] there is an attempt to obtain information from other stakeholders about their interests and knowledge before decisions are taken. There is some participation as a result of this information-gathering, but planning is still top-down' (Ingles *et al.* 1999:6).

Through consultation '[external] agents define the problems and information gathering process. Such a consultative process does not concede any share in decision making, and professionals are under no obligation to utilize the information that has been gathered' (Salm & Clark 2000:67).

While participation through consultation 'is fast becoming an outdated approach' (Salm & Clark 2000:67), stakeholder consultations were among the only means of involving communities in developing the management plan since 1996 (TNC 2003). Bakar (1996:28), in a rare and superficial sociocultural study of park communities, pointed out that local communities in and around KNP displayed a 'narrow perspective' in regards to the protected area status, in that they considered the protected area as an imposed regulation that puts constraints on their livelihood. Through consultation with local communities it was hoped to address these concerns while at the same time attempting 'to explain to […] local communities how they will be involved in long-term management planning of the park' (Mous *et al.* 2004:18). It is indicative of the KCMI's top-down approach that the awareness team is explaining KNP regulations, rather than engaging in dialogue to elaborate on different values and perceptions held by local residents towards management of the park. Moreover, according to an overview of stakeholder consultations between 1996 and 2003, most initial meetings were held in Labuan Bajo and Jakarta. The first stakeholder consultation inside the national park, where those most affected by park regulations reside, took place in October 2000 (TNC 2003). The 25-year management plan had by then already been launched.

Furthermore, there were several important gaps in consultations regarding methodologies used. Various stakeholder groups, in particular women and marginalized village residents, were not systematically identified (see also Shurcliff 2001:7). The Nature Conservancy awareness staff indicated that elder males made most decisions in consultation sessions (Shurcliff 2001:14, 32). There was no effort to involve a wider range of stakeholder groups in consultations about the proposed co-management structure. In fact, none of the documents available provides a comprehensive list of all stakeholders in the first place. 'Local communities' have been conceptualized as a homogenous group, a recurrent shortcoming in natural resource management, the term 'community' hiding a great deal of complexity (see Agrawal & Gibson 1999). Yet, the question of how the diversity *within* park communities is taken into account bears an answer. There are no arrangements that would give adequate representation to the wide range of stakeholders (see Singleton *et al.* 2002:21). This shortcoming effectively renders the interests of certain marginal groups invisible. Moreover, the potential risk of competition among co-management 'partners' possibly even dividing communities has yet to be explored in the

context of KNP. Consultation has thus been inappropriate and, as outlined below, also largely irrelevant in informing management decisions.

The site conservation planning (SCP) procedure implemented by TNC supports the notion that input into management decisions has indeed been low. The SCP process was designed as a participatory process to incorporate community views into the overall management plan (Mous & Gorrez 2001: Appendix II, 6). The process identifies the ecosystems that are found in the area and the stresses and sources of stresses that act upon these systems so as to recommend strategies for protection (Mous & Gorrez 2001:Appendix II, 2). It contributes to the management objective of implementing traditional use zones with exclusive fishing rights for park residents. The SCP process as initially proposed is an example of attempting to integrate collaborative and reflexive processes of dialogue around the meanings and understandings of customary land-use practice, ecological needs and conservation objectives, by attempting to 'translate existing knowledge into management actions' (Mous & Gorrez 2001:2). In this way communities could become directly involved in the process, so that strategies would be local and specific, and thus meaningful (Mous & Gorrez 2001:3). The SCP process thus provides a direction for coupling awareness creation per se with finding workable, community-based solutions to resource use and represents 'an excellent mechanism and focus through which to achieve empowerment of local communities' (Shurcliff 2001:23).

However, the actual impact local input has on the final decision-making process is questionable. In fact, '[community] inputs in the SCP process were hitherto indirect', although Mous and Gorrez concede that 'more direct involvement in SCP would enhance community support for conservation management' (2001:2). Thus far, the final decision-making process rests with park management. Indeed, the SCP process is largely informed by the technical expertise of TNC (Shurcliff 2001:23). Local peoples' perceptions of ideal land use and allocation may be considered as a marginal input into the overall SCP process. Based on the identification of scientifically determined ecological needs, decisions have mostly been foreclosed according to TNC expertise. As Campbell (2000) has observed in a similar context, all experts assumed that the objectives of conservation efforts were set, and participation was used as a means of 'getting people on side'. In fact, the identified need to provide awareness staff with 'training in persuasion techniques' (Shurcliff 2001:23) suggests that despite the rhetoric utilized, participation levels are in actual fact low and local input is, at most, marginal, as the use of persuasion is conceptually not far from coercion (Ingles 1999:5; Salm & Clark 2000:67). Consequently, the validation of knowledge and perceptions is biased, determined by a dominant discursive capacity that may in turn make residents reluctant to

participate. Thus, power-sharing, dialogue and participation in decision-making is minimal at the most, a shortcoming that also reflects on the KCMI's alternative livelihood programmes.

Sustainable use

Cernea (1989, cited in Thompson 1999) points out that resource degradation in developing countries, while incorrectly attributed to 'common property systems', actually originates in the dissolution of local level institutional arrangements whose very purpose was to give rise to resource-use patterns that were sustainable. In KNP there are such long-standing customary-use patterns that may not adversely impact natural resources (see also Shurcliff 2001:19). Indeed, traditional management authorities and practices could possibly reinforce appropriate regulations. As in other parts of Indonesia, the recognition of traditional resource-use patterns, even within established use zones, could possibly be used to increase incentives to patrol and enforce against illegal activities and further benefit conservation and resource management (Shurcliff 2001:19). Considering the potential benefit of integrating traditional ecological knowledge into an adaptive management scheme (see Berkes *et al.* 2000), local knowledge and values should be determined and incorporated into the KCMI. This argument has also been made by Singleton *et al.* (2002) in their environmental assessment study of the KCMI. However, customary-use patterns and rights, as well as local ecological knowledge, are often not in line with the professionalism of expert-led conservation strategies.

As the most feasible livelihood alternative for local communities, the management plan suggests the development of seaweed culture, the pelagic fishing industry and the development of fish culture targeting the live reef fish industry. However, implementation of these projects either failed due to economic and cultural barriers, or is so far largely limited to communities living outside park boundaries (Shurcliff 2001:21; Mous *et al.* 2004:48). Indeed, at present no aquaculture development is envisaged within the park (Meyer *et al.* 2004:13). As a consequence, poor park residents, in particular, face food shortages several months every year (Borchers 2004:87ff). Moreover, communities inside the park continue to be largely excluded from the tourism industry. Ecotourism could potentially provide substantial benefits by stimulating the local economy, and park residents have expressed their aspirations to become more involved in the tourism sector (PKA & TNC 2000:69). Instead, most profits go to national and international operators, who have the capacity and financial means to invest in tourism.

Considering the structure of the regional and national tourism industry, as well as fluctuations in tourist numbers, there is instead a need for a more balanced diversification of the local economy. Whether the above-mentioned livelihood alternatives potentially provide a platform for development is open to question and would necessitate a revision of these programmes to assure their socioeconomic and cultural viability. While the protection of natural resources is a necessity, the restriction of, or even ban on, their use is unlikely to meet considerable levels of support from local communities if not matched with alternative livelihood strategies that address local needs and aspirations. Furthermore this style of protection neither indicates an efficient partnership nor a socially responsible and sustainable management style. Instead, this programme suggests that the management approach was designed in a top-down fashion according to ecological concerns, but with no thought to socioeconomic viability. However, biodiversity conservation is unlikely to be successful if it does not take into account the aspirations and socioeconomic needs of local communities and resource users.

Conclusion and summary

More than ten years into TNC's engagement in the management of KNP, destructive fishing practices have been considerably reduced, and a rejuvenation of the ecosystem is underway. All evidence suggests that ecological objectives of the project could well be within reach. This feat, however, comes at the cost of resident communities, which have been further marginalized in an effort to protect the environment from the people who rely on it for their livelihoods, to the extent that many now consider relocation. Migration of park residents would solve the problem of population pressure in the park, yet it would not solve the problem of fishing communities whose members have no place to go.

Although management rhetoric in KNP evokes notions of co-management and partnership, implementation of the KCMI shows that, in practice, this is not the case. Those stakeholders whose stakes are highest have the least influence on decision-making processes, which are dominated by TNC. The management body denies the transfer of a meaningful level of control to resident communities. The planning and management process is reminiscent of traditional conservation practice in that it excludes the major stakeholders – local residents and resource users – from the decision-making and management process. Moreover, the lack of impact of public participation, as evidenced in the SCP process, suggests that decisions made by the management body were foregone conclusions. Yet, public participation should be evaluated on the ability to

change the outcome of the planning and management process, thus indicating a level of community empowerment.

Unfortunately, managers and scientists tend to doubt the readiness or competence of community members in assuming planning, management and decision-making responsibilities. This attitude of conservation experts towards local communities is an enduring phenomenon. Based on this perception, control over decision-making is relinquished on paper only. The 'scientifically rational' view of conservation managers and officials, the subsequent depreciation of local knowledge, perceptions and values, as well as a lack of real political commitment and policy support, are among the main obstacles to delegating more management authority to local resource users. Speaking from a vantage point of Western science and expertise, Redford and Sanderson (2000:1364) aptly point out that '[forest people] may speak for their version of the forest, but they do not speak for the forest we want to conserve'.

Although conditions could be improved to develop co-management arrangements that formally include local communities in KNP, the participatory process is unlikely to disengage from its institutional and political legacy, which shapes the boundaries of existing interactions and capacities. The current conflict scenario is unlikely to be resolved as long as TNC does not initiate a revision of the management structure and park regulations, taking into account needs and aspirations of local resource users. More importantly, it will need to be determined whether the concessionary scheme established by PNK would receive more support if TNC's management approach were more inclusive. Currently, only a small, yet influential, minority supports the concession. Most local stakeholders have clearly been sidelined in the planning and approval process, which does not bode well for Indonesia's journey towards becoming a more democratic system. Even provided the co-management approach in KNP would lead to increased and more active citizen participation, these procedures may in turn work to enforce dominant organizational, ideological and discursive forms. By institutionalizing and legitimizing current management structures, certain groups within local communities would be further marginalized and disempowered.

True participatory projects are those which empower people by building skills, interests and capacities that continue even after the project ends. This implies the institutionalization of such initiatives and the capacity for activities to spread beyond the immediate project in both space and time. Thus, participatory processes are a means to build social capital over the long run. However, while it is important to consider the participation process as a means of capacity building and generating stocks of social capital, hence an end in itself (Ingles *et al.* 1999:1), the benefits nevertheless become ambiguous once participants

realize that their input and involvement – as little as it may be – do not generate any concrete results or considerable changes in the outcome. The co-management initiative of KNP eloquently demonstrates this dilemma.

End notes

1. '*Recognizing* the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components' (CBD 1992:1).
2. The *DirJen Perlindungan Hutan dan Konservasi Alam* (Directorate General of Forest Protection and Nature Conservation) is within the Ministry of Forestry and is responsible for the administration of national parks and other protected areas.
3. A Memorandum of Understanding (MoU) between TNC and the Ministry of Forestry was signed on 11 November 2002, and applied to two national parks where TNC is assisting the Ministry of Forestry in park management: Komodo National Park in eastern Indonesia and Lore Lindu National Park in Sulawesi. According to Article 3 of the MoU, TNC provides expertise, assists the PHKA in developing personnel capacity, assists in providing information, assists in developing cooperation with relevant agencies, assists in implementing community development programmes, assists in identifying financial mechanisms, and generates funds on the order of at least US$500000 annually for field surveys, research and other needs.
4. See Chapter 9.

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15

Another way to live: developing a programme for local people around Tanjung Puting National Park, Central Kalimantan

SEMIARTO AJI PURWANTO

Introduction

Managing natural resources is indispensable if they are to be used, while at the same time maintaining their sustainability. Usage should only be undertaken if the sustainability of the natural resource is firmly assured (Sayer & Campbell 2004). As a consequence, every consumption of a resource has to be carried out simultaneously with an act of conservation to ensure its continuation. This ideal principle often goes against the principle of economic investment, however, wherein the goal is to acquire the highest profit possible in return for the lowest possible expenditure. To balance the damage done to natural resources due to greed, strategies to regulate the utilization of natural resources are crucial.

The management of natural resources is highly relevant to the actors whose lives depend on these resources. In the context of natural resources in the form of forests, usage of the forest is carried out in accordance with local regulations, which are applicable to the local actors, and national laws, which control not only the locals, but outsiders and investors external to the region. Political ecologists have shown how the natural resources in particular places (Hecht 1985; Dodds 1998), including Indonesia (Peluso 1992), are of interest to outsiders, not just regionally and nationally, but also internationally. The resulting depletion of natural resources and the environment must then be analyzed in a broader context

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(Blaikie 1985; Robbins 2004). One fact that has to be thoroughly considered is the reality that the forest serves as a living space to the communities dwelling in its vicinity and whose livelihoods depend on the resources located within. These are known as forest-dependent people, who rely on the forest not merely as an energy source, but also as a living space. In their use of the forest, they usually refer to community regulations that have been handed down from generation to generation and are imposed on every community living in the vicinity of the forest. These sets of rules, also known as *hak ulayat* in Indonesia, cover regulations on control, matters of spacing and the utilization of the forest.

It cannot be denied that in the national context, forests serve as reservoirs of natural, as well as energy, resources for the nation. Consequently, the right to regulate the forests has shifted into the hands of the state, and hence local regulations lose their strength. One way the state regulates forests is to establish national parks that function as nature reserves. However, there has been more recently a concern with justice in environmental and natural resource management (Zerner 2000; Lynch & Harwell 2002); failure to ensure justice will result in wider social and political impacts (Peluso 1993; Li 2003). The contrast between the state's scheme of managing natural resources by creating nature reserves and the local communities' ways of utilizing the forest ultimately results in a conflict of interests. Can the nature reserve be validated? Can the local communities still make use of the forest? These questions will be the focus of this chapter. In Indonesia, it is most often the local forest dwelling communities who are supposed to give up their claims and use of the forest in the interest of the state, as well as broader interests of international conservation.

Natural resource management in Indonesia

Natural resource policies

There are three main problems pertaining to the land tenure system in Indonesia, especially in the context of forest management. The roots of these problems lie in the fact that the law tolerates and legitimizes various systems of regulations simultaneously, even if it is done at different levels (Fauzi 2003:347–351). There are at least three legal systems commonly mentioned: customary law, the national law and the religious law. Problems with tenure in forest management mostly have to do with the state's claim to monopolize natural resources; customary law is relegated to only limited areas, such as disputes and claims resulting from legal plurality.[1]

Article 33 paragraph 3 of the Indonesian Constitution of 1945 states: 'The land, water and natural resources contained in them are controlled by the state

for the greatest welfare of the people.' This means that in accordance with the state's function to guard people's welfare, the constitutional right is given to the state to control the natural resources that are found within the boundaries of the state (Bachriadi & Lucas 2002:79–88). Theoretically, the institution of state law automatically means the annihilation of customary law, as well as the power originally embedded in community practices (Slaats & Portier 1992). However, in reality functions of the state cannot totally replace the functions of customary law and practice. Disputes then arise because of the difficulties in drawing boundaries between the different jurisdictions of the different legal systems. Hence, conflicts are a logical consequence of legal plurality, especially in situations when one law system dominates and negates the others (Ihromi 1993; Benda-Beckmann 2002).

Since the time of the Dutch colonial administration, policies were instituted to create zones of use, forming areas where natural resources could be accessed and those where they should be protected.[2] In contemporary Indonesia there are several categories of 'forest' (see Chapter 26 for a more extensive discussion of different legal categories of protected areas in Indonesia). A 'protection forest' (*hutan lindung*) includes all forest found on slopes with an angle of more than 45° and as a consequence is vulnerable to damage and erosion. Protection forests are also established for watershed management, to prevent flooding and to preserve soil fertility. Wildlife sanctuaries (*kawasan suaka alam*), on the other hand, are zones specifically recognized as ecosystems that provide support for certain varieties of plants and animals. A wildlife sanctuary becomes a 'nature reserve' (*cagar alam*) when the life-forms it protects are endangered and its ecosystem is particularly unique. If the *suaka alam* contains endangered animals, the term used is *suaka margasatwa*. As opposed to these areas of strict nature preservation, conservation areas, or areas of natural preservation – *kawasan pelestarian alam* – recognize the possibility of human use. There are three types of these natural reserves: *taman nasional* (national park), *taman hutan raya* (grand forest park) and *taman wisata alam* (recreation park). A *taman nasional* is a preservation area with an authentic ecosystem, managed according to a zoning system designated for research, science, education, production, tourism and recreation. A *taman hutan raya* is a location, natural as well as man-made, that is designed to preserve a collection of flora and/or fauna, whether they are endemic or exotic. The collection is used in research, science, production, tourism and recreation. A *taman wisata alam*, on the other hand, is a natural reserve that mainly serves as a recreational and tourism spot.

Figure 15.1 shows the relations between two variables, conservation and usage, in every category of conservation area. The more a conservation category is put to the right, the more important is its role in fulfilling the needs of the

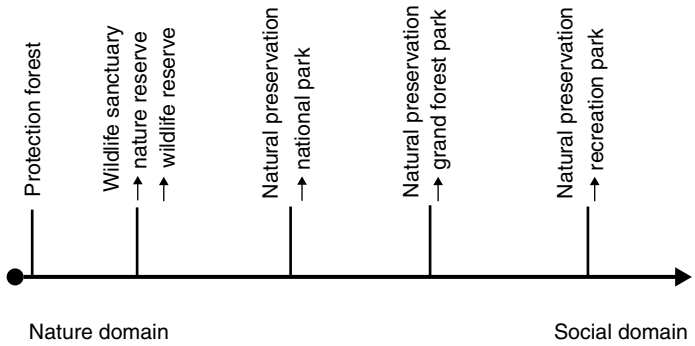

Figure 15.1. Continuum between conservation and usage across categories of conservation areas.

people. In Fig. 15.1, it is obvious that the demarcation of certain forest or maritime areas as conservation areas entails a whole set of issues. The division clearly distinguishes between areas for production, for converting resources according to the demands of people, versus areas for conservation. What is obscured by these divisions, however, is that even before these categories were instituted, people lived on the land and used the natural resources in those regions. In those cases, people developed customary regulations on the ownership and consumption of the resources. To be more specific: long before a particular area was set up as a preservation or conservation area, people inhabited the space. Even if people did not live exactly within the boundaries of what is now a national park, there were definitely people who developed the natural resources in the park's vicinity.

The issue of utilizing natural resources becomes more complicated when one realizes that the ways people conceptualize consumption of the forest diverge widely. People in urban areas might conceive of forests as providers of timber, as things having a high economic value or as things that should be protected. For people living in the vicinity of a forest, however, these ideas of the forest are inadequate to conceptualize their relationship to their forest, since the forest is their dwelling space. As a result, the issues of how to utilize forests have to include not only the economic, but also the social and cultural aspects, including both tangible and intangible uses, as well as comparing the different uses before and after the establishment of a protected area.

Tanjung Puting National Park

The national park

Tanjung Puting National Park (TNTP – Taman Nasional Tanjung Puting) lies on the southern coast of Borneo (Fig. 15.2). Its western and southern

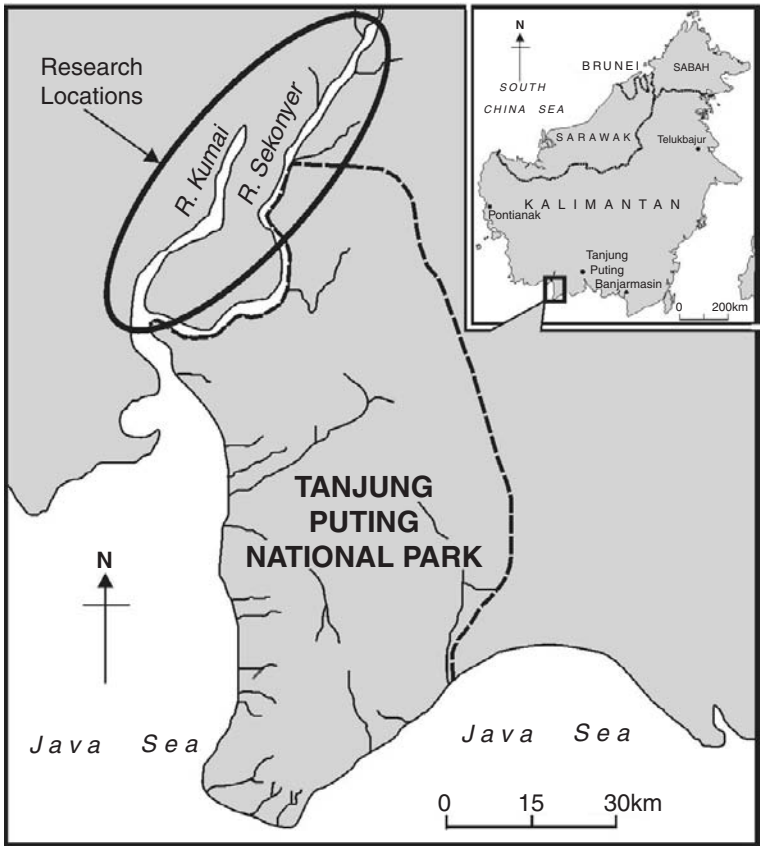

Figure 15.2. Tanjung Puting National Park with research locations.

boundaries border the Java Sea. On the northern side, the Sekonyer River forms its natural boundary, together with a 110-kilometre-long artificial boundary that was erected from the Northern Pembuang Hulu to the Seruyan River. Administratively, 253 860 hectares of the Tanjung Puting National Park in Central Borneo lie in the subdistrict of Kumai, covered by the regency of Kotawaringin Barat, and another 161 180 hectares lie in the subdistrict of Hanau, Danau Sembuluh and Seruyan Hilir in the Seruyan regency.

The Tanjung Puting National Park was created by the merging of the Sampit Nature Reserve and the Kotawaringin Wildlife Reserve. These were established by the Dutch colonial authority in 1936/1937 on an area of 305 000 hectares with the intention to protect orang-utan and proboscis monkeys (*bekantan*). In 1984, its status altered and it became a national park according to the decree of the Minister of Forestry no. 096/Kpts-II/84. On 11 December 1984, based on decree no. 46/Kpts/IV-Sek/84 issued by the Directorate General of Forest Protection and Nature Conservation, the area of TNTP was extended by adding to it the Wildlife

Reserve of Tanjung Puting stretching over 300 040 hectares of land. In the subsequent developments, based on ministerial decree no. 687/Kpts-II/96 issued by the Ministry of Forestry, the national park was again extended to 415 040 hectares, covering the former area of Tanjung Puting Wildlife Reserve (300 040 hectares), the area of a former production forest as large as 90 000 hectares, and a water region that stretches over 25 000 hectares (Kepala BTNTP 2002; Susilo 1999).

Of the thirteen species of primates inhabiting Borneo, seven of them live in Tanjung Puting National Park. The seven species are *orang-utan*, *bekantan* (proboscis monkey), *owa-owa* (gibbon), *kera ekor panjang* (long-tailed macaque), *beruk* (stump-tailed macaque), *kelasi*/ *lutung merah* (mitered leaf monkey) and *lutung* (leaf monkey). Alongside them, a number of mammals also inhabit the area, such as *babi hutan* (wild boar), *beruang madu* (sun bear), *rusa sambar* (sambar deer), *kijang* (barking deer) and *kancil* (lesser mouse deer), various species of *bajing* (squirrel), *landak* (porcupine), *trenggiling* (Malayan pangolin) and even *pesut* (Irrawady dolphin). Within the borders of the national park, at least 200 bird species have been recognized, such as the *sindanglawe* or white stork (*Ciconia stromii*), which is one of the 20 most endangered types of stork in the world.

The Tanjung Puting National Park is maintained by the *Balai Taman Nasional Tanjung Puting* functioning as the *Unit Pelaksana Teknis* (Technical Maintenance Unit) under the supervision of the *Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam* (PHKA – General Directorate of Forestry Protection and Nature Conservation) that is directly under the Department of Forestry. Because of this, the role given to the local government is very small. Based on the explanation provided by the subdistrict secretary of Kumai, everything that concerns the funding of TNTP is directly decided by the national government in every management meeting. The subdistrict does not have a voice in making decisions about the TNTP. The reason for this situation is the fact that the TNTP is funded by international organizations (Direktorat Jenderal Perlindungan Hutan Dan Pelestarian Alam 1994).

The Tanjung Puting National Park exists in Central Borneo as a wildlife sanctuary for orang-utans, which are facing serious threat at present. The growing amount of illegal logging, illegal mining, theft of forest crops, conversion of forest into plantations and the clearing of forest land all contribute to the destruction of the habitat of the orang-utan, and are resulting in a decrease in their population.

Most of the people living in the area surrounding TNTP are poor villagers. For them logging the forest is the main means of obtaining cash to support their daily lives. In general, in the regencies of Kotawaringin Barat and Seruyan the taking of timber has been the main economic pillar of the population for decades. This has been done with or without legitimate HPH or IPK licences.[3] There

has been a series of actions taken to reduce the logging, but they have not been very effective. In the latest development, regional autonomy legislation and decentralization in the managing of natural resources, especially forests, has resulted in a further degradation of the forest. This is because local governments have issued a large number of licences to both give access to forests as well as convert forest land into other uses, in an effort to increase local revenue in the name of development.

A study was done focusing on the villages surrounding the national park that were considered to have the highest potential to generate pressure on the TNTP.[4] The majority of the people belong to the Malay ethnic group. These villages were recently formed and the national governing structure applies to them, as is also the case in the other villages. The traditional governing system and political powers have diminished gradually. To summarize the sociocultural aspects of the villages, refer to Table 15.1.

As shown in Table 15.1, most of the villages are occupied by the native Dayak (i.e. Mendawai) and Melayu (Malays). However, in the capitals and in the subdistrict of Kumai, newcomers from Java and Madura are also found, as well as the Bugis of Sulawesi. Since the population that lives adjacent to the national park consists of people from multifarious backgrounds, it is only logical that the relation between the social dynamics and land use should be carefully considered. Alterations in the land use will certainly affect the state of the national park. The economy of people who depend on foraging, logging and fishing within a particular territory will be affected when that area becomes designated as a national park (Wollenberg & Ingles 1997). The park becomes a barrier to their daily activities of logging trees in the forest, fishing in the rivers, or opening up secondary forest for cultivation.

If the forest continues to deteriorate, the conditions of orang-utan will soon reach an alarming and endangered state. Alternative means of subsistence have to be offered to the people who are involved in destructive activities (such as illegal logging and illegal mining). Identification of the subsistence activities of the people living in the vicinity of the TNTP shows a strong dependence on the natural environment. Some of their daily needs are met from the natural environment, while some other good have to be bought. One can categorize the economic system of these communities as semi-subsistence. The most common subsistence economic activities are shifting cultivation, tidal rice fields, plantation agriculture and fishing. Commercial economic activities are, for example, logging, foraging for non-timber forest products such as gembor bark or jelutung sap, freshwater fishing, saltwater fishing, oil-palm farming, vegetable farming, gold mining and fish breeding; some inhabitants are handymen and small-scale entrepreneurs. These activities have surfaced since

Table 15.1 *Sociocultural aspects of villages near the Tanjung Puting National Park*

No.	Village	Ethnic composition	Religion's affiliation	Main means of subsistence	Land-ownership sy
1	Sei Sekonyer	Melayu (Malay) majority, small number of Bugis and Javanese	100% Islam	Cultivation, logging, gathering NTFP*	No individual proper
2	Sungai Bedaun	Madura majority, Melayu minority	100% Islam	Cultivation, oil-palm plantation wage-working, vegetable farming, gold mining	Individual, no collect
3	Candi	Madura, Java, Tionghoa (Chinese) majority, Melayu minority	Islamic majority, Protestant and Catholic minority	Vegetable farming, cultivating, logging, business, dock working	Individual, no collect
4	Kumai Hulu	Melayu, Madura, Java, Tionghoa	Islamic majority, Protestant and Catholic minority	Logging, cultivation, business, dock working	Individual, no collect
5	Teluk Pulai	Melayu, Mendawai, Bugis and a small number of Javanese	100% Islam	Fishing, coconut farming, logging	A small number of p village property
6	Kubu	Majority Melayu, Madura, Bugis	100% Islam	Fishing, logging, gathering, NTFP, cultivation	A small number of p village property
7	Teluk Bogam	Melayu, Bugis, Java	100% Islam	Fishing	Individual property,
8	Sungai Bakau	Mendawai, Bugis, Melayu	100% Islam	Fishing	Individual property,
9	Keraya	Bugis, Melayu, Mendawai	100% Islam	Fishing	Individual property,
10	Sungai Cabang	Bugis, Jawa, some Melayu	100% Islam	Fishing, fish-pond nurseries	Individual property,
11	Telaga Pulang	Melayu and Banjar majority, Java minority	Islamic majority, two Protestants	Fishing, logging, cultivation	Individual property,
12	Baung	Melayu majority, Java minority	100% Islam	Logging, fishing	Individual property,
13	Muara Dua	Melayu majority, Java minority	100% Islam	Fishing, logging	Individual property,
14	Tanjung Hanau	Melayu majority	100% Islam	Logging	Village property

*NTFP, foraging for non-timber forest products.

natural resources cannot fulfil people's needs any longer, and as a consequence this reliance on money has increased. According to the study undertaken in 14 villages, 19 types of activities were identified. These were then given a score from zero to four depending on the degree of involvement in any particular village. Zero means that no villagers of that village use that particular economic activity, while four means that the majority of the villagers are working in that sector. Numbers between one and three mean the conditions lie in between the extremes.

Based on the data presented in Table 15.2, it is clear that the people's reliance on the forest is still very great. To the people the forest is one of the main resources to meet their household demands; it provides them with wood, jelutung sap, gembor bark and fruits. The forest also guarantees the availability of new areas to cultivate, which is required by shifting agriculture systems, while the game and the fish in the rivers flowing through the forest serve as sources of protein. In the perception of the people in these villages, the forest is their ancestors' heritage. This changed when forest concession companies were given access to their regions. The forest, previously owned and controlled by the people, then became controlled and owned by the licence holders of the forest concessions (Hak Penebang Hutan, HPH), and the locals' access to the forest became severely inhibited. The surrendering of what they saw as their forest lands to forest concession holders, who enjoyed unlimited access to the forests, has fuelled the antipathy of the locals. This widespread antipathy has become disastrous from the point of view of conservation. The feeling of injustice has been, in its turn, misused by brokers who offer loans and who are ready to buy timber from those who agree to clear the forest. Unfortunately, these offers are often willingly accepted by the impoverished villagers. Villagers who originally consumed only a limited amount of timber to meet their daily needs have now started to exploit timber as means of earning money. In this way the clearing of the forest has become widespread.[5]

To villagers, logging is the preferred activity of the nineteen activities identified in Table 15.3. Although if viewed from the aspect of production, the score for logging is not as high as that for cultivating vegetables, for example, the larger scale of the enterprise and the relative effortlessness in selling their products contributes to making logging more tempting to villagers. The fairly easy availability of trees in the forest also contributes to the villagers' choice to cut timber instead of mining gold that can only be found in the deepest earth or at the bottom of the rivers (Table 15.2). Table 15.3 lists the preferred activities carried out and the scores from one to three, which give an indication how villagers feel about the activities. Thus, a score of one was given to an activity that villagers felt was difficult for them to be involved in, whereas a score of

Table 15.2 *List of economic activities conducted by villagers near Tanjung Puting National Park and their frequency on a scale of*

Villages Economic sectors	Sei Sekonyer	Sungai Bedaun	Candi	Kumai Hulu	Teluk Pulai	Sungai Cabang	Kubu	Sungai Bakau	Teluk Bogam	Keraya	Telaga Pulang	Baung	M D
Foraging for gembor	3	0	0	1	3	1	2	0	1	0	1	1	
Foraging for jelutung	2	0	0	1	1	1	1	0	0	0	1	1	
Logging	4	1	2	4	3	2	4	1	1	1	3	4	
Non-irrigated plantations	4	2	1	3	2	1	1	1	1	1	2	1	
Vegetable farming	0	3	2	0	0	0	0	0	0	0	0	0	
Rice-field farming	2	2	0	3	0	0	0	0	0	0	0	0	
Coconut	0	1	1	1	4	4	3	3	3	3	1	1	
Oil palm	0	4	4	3	0	0	0	0	0	0	2	0	
Hardwood trees	1	0	0	0	0	0	2	0	0	0	0	0	
Saltwater fishing	0	0	0	4	4	4	4	4	4	4	0	0	
Freshwater fishing	2	0	2	2	0	0	0	0	0	0	4	2	
Fish-pond nurseries	0	0	0	0	2	3	2	2	2	2	0	0	
Karamba nurseries	0	0	0	0	0	0	0	0	0	0	4	1	
Fish processing	0	0	0	0	0	0	0	2	2	0	1	0	
Cattle breeding	2	3	2	1	3	2	1	1	1	1	3	1	
Gold	1	2	2	2	0	0	0	0	0	0	0	0	
Weaving	3	0	3	2	3	2	1	3	3	3	1	0	
Skills	0	0	2	2	0	0	2	0	0	0	0	0	
Tourism	1	0	0	1	0	0	2	1	1	0	0	0	

Table 15.3 *Preferred economic activities and perceived ratings of benefits from these activities on a scale of 1–3 for villagers living*
Tuting National Park

		Investment to produce	Market potential	Competition	Marketing obstacles	Profit	Techn
.	Vegetable farming	2	3	3	3	2	3
.	Logging	2	3	2	3	2	3
.	Gembor	2	3	2	2	3	3
.	Jelutung	2	3	2	3	2	3
.	Freshwater fishing	2	3	2	3	2	3
.	Karamba fish-nursery	1	3	2	3	3	2
.	Rice-field farming	2	2	2	3	2	2
.	Saltwater fishing	1	3	2	3	2	2
.	Fish processing	1	3	2	2	3	2
0.	Cattle breeding	2	3	2	2	2	2
1.	Gold mining	1	3	1	3	3	2
2.	Weaving	3	2	1	2	2	3
3.	Tourism	1	3	2	2	2	2
4.	Non-irrigated fields	3	1	1	2	2	3
5.	Oil palm	3	2	1	2	2	2
6.	Fish-pond nursery	1	3	2	3	2	1
7.	Coconut	3	3	1	1	2	1
8.	Hardwood trees	1	2	2	2	2	2
9.	Skills	1	2	2	2	2	1

three was given when the villagers felt they had good potential to be involved in these activities and to profit from them.

We were concerned to find out why people from all the villages near the park were involved in logging (see Table 15.2), even though it is an activity prohibited by law, and not always as profitable, or as easy to be involved in, as some of the other activities shown in Table 15.3 (in that it did not receive the highest score). We made a calculation of the benefits of working in the logging sector, see Box 15.1. This represents the situation in 2002, when the study was undertaken.

Box 15.1 Calculations on logging profits for one month's work

Logging is usually done in a group that consists of five to eight people and is headed by one chief. Before clearing, the loggers conduct a reconnaissance to find the best place to cut the trees. After having found a spot, they approach a 'boss' to finance them and supply them with the provisions needed so they can stay in the forest for the required period. These workers usually also appeal for a loan, the sum of which is enough for the living costs of their families during the approximately one month that they will be away. The loan will then be deducted from the money they receive after selling the timber to the very same 'boss'. This 'working to pay debts' has become the norm for those seeking to work as loggers.

To get to the timber, one has to normally walk for about four hours to get into the forest, and thus far from the river where the assembling takes place. In other words, the time needed and costs increase, while the selling price decreases. Since the trade of ramin has been banned, people nowadays log local timber such as nyatuh, pulai, lanan/meranti, ketiaw, etc. The selling price of these local timbers is lower than the price they used to obtain for ramin. The margin of price for every cubic metre of timber sold by the logger to the broker lies between Rp. 100000 and 250000 depending on the species. This first broker will sell on to a second broker for twice the price.

For every group consisting of six people approximately Rp. 6 million is needed to log. This amount covers the making of a trail from the forest to the riverbank, the cost of renting horses, fuel for the chainsaw, detergent for levelling the trail, thick ropes and other tools. Not included in the Rp. 6 million is the monthly living cost for the logger's family, which can be as high as Rp. 400000, and supplies for the logger himself, which is as much as Rp. 300000. So, for every logger an amount of approximately Rp. 700000 is added to the initial Rp. 6 million loan for the entire group. Other expenses are the renting of a raft to tow the timber to the storage space, which costs

Rp. 10 000/m^3 and the paying of bribes to 'officers' that can reach the amount of Rp. 1 000 000. In the period of one month, a group can generate as much as 100 m^3 of timber. If the price at the moment is Rp. 200 000/m^3, the total money gained in one month is 200 000 × 100 = Rp. 20 000 000. The boss then deducts the debts owed by the workers from this sum. After all the deductions, what is left over is divided according to the number of workers.

Initial budget	Rp. 6 000 000
Renting rafts	Rp. 1 000 000
Paying officers	Rp. 1 000 000
Total costs = 6 000 000 + 1 000 000 + 1 000 000	Rp. 8 000 000
Income = 100 × 200 000	Rp. 20 000 000
Profit = 20 000 000 − 8 000 000	Rp. 12 000 000
Income per person = 12 000 000 ÷ 6	Rp. 2 000 000
Provisions in the forest	Rp. 700 000
Net income per person 2 000 000 − 700 000	Rp. 1 300 000

This net income, at late 2006 exchange rates, is approximately US$140 for one month's work.

Villagers' perception of the TNTP

The Tanjung Puting National Park, as is the case with other forests in Borneo, cannot avoid being the target of looting. Preventive measures have been taken by the relevant parties, but this has only resulted in animosity and antipathy of the villagers toward the TNTP. To the people, prohibiting entry to the forest means losing an important component of their livelihood. The results of our survey indicate that, in general, the national park is considered by the neighbouring villagers as a thorough disaster, which does not give them a single benefit. The management of the national park is accused of never having attempted to help the villagers replace the means of subsistence that were lost to them. Instead, they have positioned the villagers as a scapegoat, who are held responsible for the destruction of the national park.

In the view of some of the villagers, the TNTP is associated with the orang-utan, whose existence is the reason behind the ban on entering the forest; hence, it is not surprising that animosity towards the orang-utan is growing in the villages. They consider that the management of the Tanjung Puting National Park and the Orang-utan Foundation International (OFI)[6], headed by Biruté Galdikas, are only concerned about the orang-utan and not about the people living in the vicinity. Not every villager feels this way; a small number of villagers admit that the TNTP brings advantages to those who are accepted to work in the OFI or who are owners of tourist boats. A list of the perceptions

Table 15.4 *Villagers' perception of Tanjung Puting National Park*

No.	Perception	Implication
1	Only causes problems	Negative for the social life
2	Only causes disputes	
3	Obscure boundaries	
4	Only communicates with the district officers	
5	It is the cause of decreasing income	Negative for the people's economy
6	It has not done anything for the people	
7	It makes their lives harder	
8	It hasn't given a significant economic contribution	
9	It provides no assistance to the villagers	
10	TNTP is not able to ban logging	
11	It is only advantageous to the orang-utan	Negative for humanity
12	It is identical to the orang-utan	
13	People have to compete with the orang-utan	
14	Villagers hate the national park	Negative for the national park
15	The park is useful to prevent floods	Positive for the people
16	It provides work opportunities	
17	It causes tourists to visit their villages	

of the villagers towards the TNTP that was recorded during the study is presented in Table 15.4.

From the 17 general perceptions expressed by the villagers, only 3 can be considered positive. The other perceptions depict TNTP as something negative for the villagers' life, both social and economically. The national park is seen as a disadvantage for social harmony; it only causes disputes between the villagers and the management of the park. One of the causes of these disputes is the unclear boundaries of the park. The villagers have complained that the national park has disrupted their orientation of space. This condition is worsened by the assumption that the management of the national park is more concerned about the government officers and decision-makers from outside the region. The perception that the national park has only been created in the interest of those who do not live in the adjacent areas of the forest is widespread. All these views cause distress on the part of the villagers.

The people express great dislike for the national park management and claim that the national park constantly causes them economic problems. Their access to the forest in order to search for valuable materials is limited. Foraging for wood, an activity on which the villagers have always relied, has turned into

something risky and dangerous. These prohibitions on exploring the forest's potentials have not been compensated by the management's effort to provide the villagers with alternative means of subsistence.

On the other hand, the conservation efforts towards the endangered orang-utan (Rejsen *et al.* 2001) and the provision of so many facilities for them are seen as excessive by the villagers. The fact that the orang-utan are taken care of, and given so much, while villagers struggle just to meet their primary needs, is a blow to their sense of human dignity. This has led to the assumption that the national park is only advantageous to the orang-utan and not to the inhabitants of the surrounding area. There has hardly been any visible attempt to involve villagers in the park's activities; this insensitivity to their sociocultural condition has generated apathy and antipathy.

Despite these negative perceptions towards the national park, there are still some voices that express the belief that whatever the efforts made by the park management, the conservation of the forest is a positive outcome in itself. Hence, for some, this condition is felt to be a benefit of the national park, since this controls the level of ground-water absorption and prevents flooding.

Conclusion and summary: managing a national park, looking for alternatives for the people?

The main objective in establishing a national park, apart from conserving certain animal or plant species, is to provide the people inhabiting the surrounding area with limited opportunities to take advantage of the forest. This is the ideal situation proposed by some scholars (for example, Zerner 2000; Lynch & Harwell 2002; Sayer & Campbell 2004). Unfortunately, the management of the Tanjung Puting National Park regards the people's activities as obstacles to the park. This is obviously true in the case of illegal logging or hunting. Because the park management considers that the frequency of illegal activities is increasing, they have decided to take preventive actions. These actions include: preventing or prohibiting activities inside the area of the national park, campaigning about what productive zones of the national park can be used and campaigning about the importance of looking for alternative enterprises outside the forest. The government, through the national park and international donors, then justifies its intervention in managing the forests. As Blaikie (1985:50–78) has argued, the situation of involvement is never as simple as just conserving nature.

The data obtained from the TNTP show that none of the three activities have been easy to accomplish. Since the early 1970s, the Borneo rain forests with their vast timber potential have always been seen as a source of profit for

traders. They have built business networks that over the years have increased in terms of complexity by offering fast and easy-to-get cash to the people living in villages adjacent to the forest. Since money could be obtained easily, a new lifestyle started to develop in the villages, replacing the old ways of living as shifting-agriculture farmers and fishers. The timber trade offers a livelihood based on debt, something they did not know when they were still farming, fishing, hunting and gathering. As the number of available hardwood trees has diminished over the years, villagers cannot now leave this lifestyle immersed in debts, which they have been leading for some time now. Returning to making a living through agriculture or fishing is no longer seen as profitable. The income obtained from shifting agriculture, as well as fishing, is no longer sufficient to furnish them with the lifestyle they have created working in the timber business. However, at the same time, the diminishing and restricted forests can no longer maintain their subsistence. The attempt to persuade people to return to their former livelihoods, such as farming and fishing, is impossible without altering their new way of living, which has formed over the last 30 years.

The attitude of 'fast-and-easy' money and the entrapment of debts has become a new culture that for a time fit well into their environment. When the timber supplies from the forests were still in abundance and the timber business was not yet debilitated by a complex set of rules and regulations, logging made the people living in villages surrounding TNTP materially wealthy; they could afford televisions connected to satellite dishes, cars and motorcycles, gold and modern clothes, which have all become part of their daily life.

These are some of the factors needed to explain the relations of local people living near the forest and the question of nature preservation. In order to understand their relation with their environment, it involves, as some political ecologists have noted, social variables and networks of connection with many parties outside the forest area itself (Blaikie 1985:51; Blaikie & Brookfield 1987), as well as questions of cultural forms of resistance (Moore 1993). The involvement of OFI, the tourists and scientists, government officers and local and national NGOs has coloured the management of Tanjung Puting National Park. On the other hand, the villagers around the park have also changed their ways of life in ways that have not always correlated with the park's policies. Logging industries that have existed for decades, both legally and illegally, have had a role in shaping villagers' perceptions of the forest, and so have the activities that have been engaged in by the park management. Market relations and the arrival of other ethnic groups as traders and migrants to the region have also affected their perceptions of the park.

As a result, the campaign to forbid logging is an arduous undertaking. The attempt to revive farming and cultivation has not been received enthusiastically

by the villagers, because these activities mean that they have to wait until harvest to receive money. That aside, the high acidity of the ground has caused a decrease of fertility and, as a consequence, the cost of cultivation has risen because of the need for fertilizers.

In the meantime the timber industry in Indonesia remains a tempting alternative because it does not require a lot of investment while guaranteeing high revenues. The regulations on the timber industry are not powerful enough to inhibit their activities; illegal timber trading has become very common. It is done quite openly and seems to be invulnerable and untouchable by any legal sanctions. Indeed, logging activities are bound to continue because of persistent market demands. Even now there is no visible solution to the two main issues that threaten the forest's natural resources. From the perspective of the villagers, there is a growing awareness that 'timber is easy money', but the debts incurred during production make it difficult for them to leave the timber industry. Externally, on the other hand, national and international demand for timber has not abated, and continues to attract workers into the forest.

End notes

1. Legal plurality is an important term in the anthropological study of law. It was introduced by John Griffith to refer to a condition where several legal systems exist in a particular society. Difficulties in legal plurality include whether a formal legal system can adopt other forms of order such as customary law or convention (Svenson 2002), and the issue of coexistence among difference systems of order, such as the formal legal system, customary, religious and other systems in a society (Benda-Beckmann 2003; Woodman 1996).
2. Wiratno *et al.* (2001) suggest that conservation policies are rooted in colonial policies and practices so as to control land for economic benefits and to conquer the existing kingdoms in the Netherland Indies.
3. Hak Penebang Hutan (HPH) forest concession licences, were given quite readily to various contractors during the New Order period.
4. The study was carried out for two months in early 2002 by the Laboratorium Antropologi, University of Indonesia, in collaboration with the Conservation International Indonesia Program (Purwanto *et al.* 2002). It covered the villages Desa Sei Sekonyer, Sungai Bedaun, Kumai Hulu, Candi, Teluk Pulai, Sungai Cabang, Kubu, Sungai Bakau, Keraya and Teluk Bogam in the regency of Kotawaringin Barat; Telaga Pulang, Baung, Muara Dua and Tanjung Hanau within the borders of Seruyan regency. To be more detailed, two villages were chosen as study cases because of their location adjacent to the national park.
5. To some villagers, cutting trees is closely tied to fulfilling their primary needs. Unfortunately, on a larger scale this simple matter is misused by groups owning large amounts of capital without the necessary concern for the environment. Logging and timber exploitation done

under the HPH, as well as by the locals, has resulted in deforestation in a short period of time. The forest has been exploited, leaving nothing but the conservation areas. Recently, even these areas have become targets of uncontrolled clearing. According to the data recorded, not one single conservation area has been untouched by logging activities. Conservation areas have been subject to logging for the last two decades and in some places the clearing still continues.

6. Orang-utan Foundation International (OFI) is a non-profit organization dedicated to the conservation of wild orang-utans and their rainforest habitat in Indonesia and Malaysia. Founded in 1986 by scientist and conservationist Dr. Biruté Mary Galdikas and her former doctoral student, Dr. Gary Shapiro, OFI focuses on three objectives: research, conservation and education. Orang-utan Foundation International also disseminates information about the orang-utan to galvanize policy-makers and the public towards an appreciation of orang-utans and their highly endangered status (see http://www.orangutan.org for further information).

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16

For the people or for the trees? A case study of violence and conservation in Ruteng Nature Recreation Park

MARIBETH ERB AND YOSEP JELAHUT

Introduction: environmental degradation and 'green-war'

> *[T]he concept of 'green-war' – in its ideological circulation and strategic deployment – may itself fuel conflicts rather than assist in defining policies to address them.* (James Fairhead, 2001, in *Violent Environments*, pp.214–215.)

Apocalyptic forecasts about the state of the planet have been increasing for some time now. Peluso and Watts (2001), in a recent collection of essays assessing the relationship between environmental degradation and violence, attempt to criticize and eschew some of the simplistic formulas that have been emerging, where scarcity will ultimately lead to genocide, a phenomenon named 'greenwar' by some scholars (Bennett 1991). These apocalyptic visions have increasingly informed matters of international security and politics most particularly since the end of the cold war (Peluso & Watts 2001:4). The journalist Robert Kaplan's (1994) influential article, 'The coming anarchy: how scarcity, crime, overpopulation, and disease are rapidly destroying the social fabric of our planet', was just one of the more influential of the catalysts to this mounting doomsday vision (Peluso & Watts 2001:1; Rimmerman 1998:284–289). Perhaps the most disturbing outcome of these growing fears is how the

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solutions proposed seem to, with only passing regret, champion the rise of elite rule, empire and authoritarian control (Rimmerman 1998:285); in other words the era of liberal democracy itself must be doomed, if we want to save the planet. Despite rhetoric to the contrary, one can see that this is in fact what has been happening in the post-cold war era. Increasing militarism and elite control are apparent on a global scale, particularly since the events of 11 September 2001, and as Afiff and Lowe (Chapter 12) suggest, this supports the return to an enforcement paradigm within conservation. But Malthusian arguments of overpopulation and resource scarcity leading to mass conflict and genocide are just as obfuscating and black and white in their oversimplification as the rallying cries of 'you are with us or you are against us'. As Fairhead argues in his paper in the Peluso and Watts volume (2001:215), these kinds of arguments lead to a depoliticization of what the conflicts are really about and also lead to solutions that often make them worse.

We want to argue in this chapter that these 'green-war' ideas – that degraded environments lead to conflict – were behind one of the most disastrous policies ever implemented in Manggarai regency, on the island of Flores in eastern Indonesia. This policy, which led to the clearing from protected forests around the town of Ruteng, the capital of Manggarai district, all the coffee trees that inhabitants had been planting there since the time of the Dutch colonial regime, was ostensibly done in the name of environmental degradation and the resulting conflict. What was especially ironic, in this case, as well as other similar cases of militaristic evacuation around Asian national park lands, is that it took place precisely at a time when Indonesia in particular, and Asia more generally, is supposed to be 'democratizing'. We want to argue in this chapter that this 'green-war' view led to these 'pre-emptive' measures, and in fact more conflict than that which it was supposed to be preventing. More generally, we suggest a lesson is to be learned from this case: pre-emptive, authoritarian, military measures towards conservation and protection of parks and reserves can never be successful, in contradiction to some recent claims by 'resurgent protectionists' (Wilshusen *et al*. 2002) that this is the only solution (Kramer *et al*. 1997; Terborgh 1999). We argue, following Fairhead, that the premises on which they are based are wholly misconceived. Attempts to forcefully evict local people from parks ignore the biohistory of land use that has led to the 'biodiversity'. At the same time, assumptions that local uses have led to degradation and conflict ignore the ways that it is wealth of resources that lead to conflict, not their lack (Fairhead 2001:226–229). Hence we argue that a political economy of resource use and control has to be written into a strategy for protection that looks beyond the local.

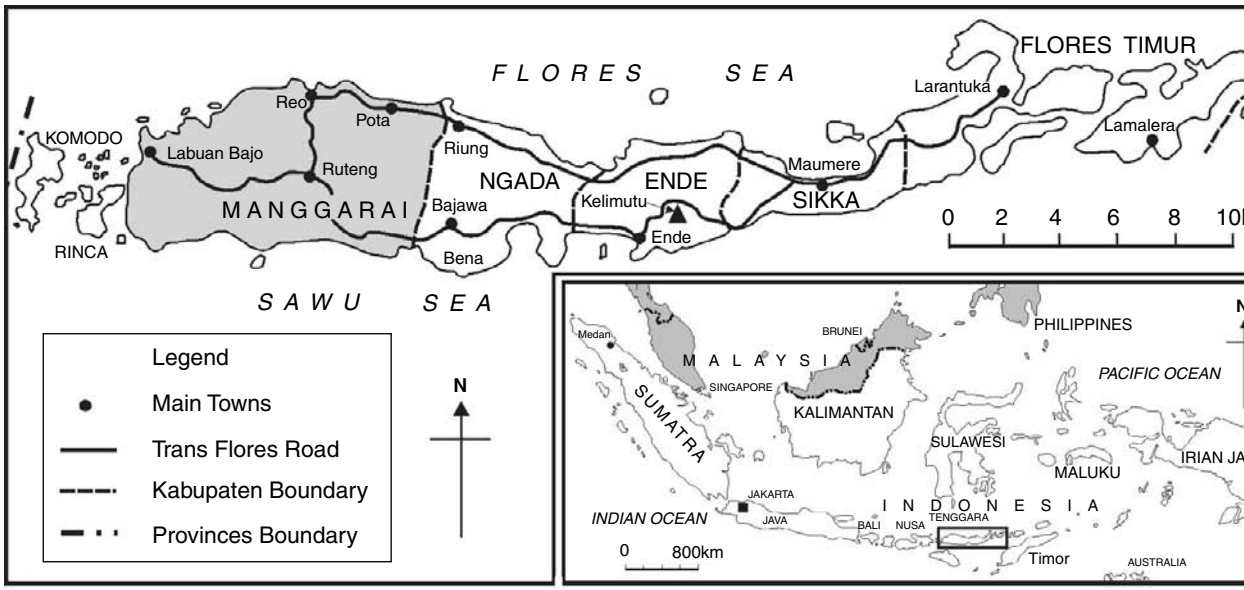

Figure 16.1. Map of Flores.

Protected forests and the Ruteng Nature Recreation Park

On 10 March 2004, 6 farmers were killed and 28 others wounded or maimed outside the police station in Ruteng, capital of the Manggarai regency on the island of Flores (Fig. 16.1). They originated from an area called Colol, where villages, since the time of the Dutch, had been famous for their coffee and other cash crops. These farmers had been protesting because a number of their fellow villagers, mostly women and old men, had been arrested for digging up root crops on land from which they had been recently evicted. One hundred days later, to commemorate the deaths and protest against the shootings, expatriate Manggaraians living in the city of Yogyakarta held a ritual to denounce the regent of Manggarai, whom they held personally responsible for these deaths. They claimed by ordering these farmers to be shot, he had not acted as a 'Manggaraian person', so they cut all kinship ties with him by sacrificing a black chicken (Liputan 6.com 2004).

These events were in response to two years of the regent's strong-arm measures to clear coffee trees and local farmers from land that was considered to fall within the boundaries of the Ruteng Nature Recreation Park. The regent, who had been elected to office in 1999, had set as one of his main goals the resolution of land conflicts that had been increasing in the Manggarai regency over the previous decade. Increasingly, after the end of the New Order regime, people attempted to reclaim land they felt they had been inadequately compensated for. Many earlier conflicts over land in the 1990s, however, had been between villages, whose residents were related by blood or marriage and had fought battles over increasingly valuable land. Other issues that became tied to land conflict were shrinking mountain springs and flooding in the lowlands, all seen to be due to the deforestation of the Manggaraian countryside. The regent maintained the only solution was strict conservation enforcement and had begun a programme in 2002 to clear away any habitation of government-claimed forest land.

In 2000–2001, we had been engaged in research on the question of ecotourism and had visited a number of the villages within the boundaries of the park, which subsequently became the target of government clearing operations. In an attempt to put the clearing operations and the violent incidents of 2002–2004 into perspective, we reviewed the material that we had earlier collected, and analyzed both written and oral accounts of the history of the land, the people and the events leading up to the shootings of 2004.

According to the head of the Nature Recreation Park, whom we interviewed in 2000, the forest lands of the recreation park were originally referred to as *hutan tutupan* – 'closed forest' – and were designated for watershed protection

during the Dutch colonial period in the 1930s. The Dutch had given four villages special permission to use land within the boundaries of the closed forests, areas called 'enclaves'. The head claimed that these boundaries had not changed, though the original mounds of rock were replaced with cement pillars between 1979 and 1981. We visited all of these enclaves in 2000–2001, including the enclave of Tangkul, located in the village area of Colol, the home region of the villagers who were shot in 2004.

According to villagers in all the enclave villages, the land was their ancestral land, held communally and an integral part of their community life. In traditional Manggaraian ideas of community, the village and the main house or 'drum house' (*mbaru gendang*) were one with the agricultural land (*lingko*) – expressed in the saying '*gendang one, lingko pe'ang*' ('the drums on the inside, the fields on the outside'), and the identical round shape of the houses and the fields. The 'drums' are the drums located within the main round house, and represent the authority of the leader who guards them, as well as the living and dead community who hold the land. Each village had many *lingko* under its tenure, most of which were left fallow at any given time in the traditional slash-and-burn agricultural system. Although the Dutch colonial administration, and some recent authors (Lawang 1999; Moeliono 2000) considered the traditional system to be potentially environmentally destructive, fearing that all forest land might eventually have been opened up and used if the Dutch had not set aside protected land, recent local advocates of the traditional swidden system in Manggarai argue that indigenously there were ideas of 'conservation' that were expressed through protected, forbidden forest lands, where people believed various spirits lived.

The Dutch colonial administration itself had introduced coffee as a cash crop into Manggaraian villages, and the Colol region won a prize in 1937 for their *Keboen Kopi Arabika* (arabica coffee plantation), which, according to research done by Colol advocates, actually preceded the Dutch boundary formation of the protected forest (TARM 2004; Aur 2004:114).[1] This seems to indicate that Colol coffee plantations were not included within the area of forest protected by the Dutch.

People in the enclave villages insisted, despite the government's claim to the contrary, that when the boundary markers were changed in 1979–81, the boundaries had been substantially altered, reducing the land that they had rights over, some claimed, by more than 50%. The head of the Taman Wisata Alam Ruteng (TWAR), on the other hand, insisted that the villagers' claim that protected forest land was their ancestral agricultural land was false, since there would have been clear signs indicating this. In fact, when villagers took us into the protected forest land, which they claimed was theirs, they showed

us proof that the land had at one time been inhabited by their ancestors, such as various trees that are only planted on the borders of swidden fields (*Cordyline fructosa*, called *nao*, in Manggaraian languages) and various kinds of fruit trees. We even saw original Dutch boundary markers, several hours' walk away from the cement pillars that marked the present-day protected forest boundaries. The refusal to accept their claim that the boundaries had been moved and the denials of their versions of the biohistory of the land makes it difficult for the people in the villages to trust anything that the park's officials tell them.

On the other hand, it is also true that the population of Colol and other villages in the enclaves had grown significantly since the 1930s. As Aur points out, from a village of about 70 people in the 1960s, Colol grew to a village complex of over 2000 in the twenty-first century (2004:116). This massive population growth meant that Colol villagers were under pressure to utilize 'forest land' that had not been cleared for many decades. But the boundaries of the protected forest were not clearly marked. Many people had over the years bought and sold land, and actually held certificates for land that later the government claimed was 'protected forest'. During the 1960s and 1970s, according to Aur (2004) for Colol, and we had also heard this in other enclave villages, the population was forced to enter into a profit-sharing system with the government, whereby they had to hand over 60% of the profit from their coffee trees. This was done, ostensibly, as a kind of compromise, since the government claimed that the people had planted their trees on state land. In 1978, as was the case in the other enclave villages, the government stopped asking for a cut of the villagers' coffee harvest; this was hence assumed to be an admission by the government that the land was, in fact, the villagers' and that the government had ceded its claim (Aur 2004:115).

This protected forest area became known as the Taman Wisata Alam Ruteng (TWAR) – Ruteng Nature Recreation Park – when the Asian Development Bank (ADB) began a 'biodiversity conservation' project in 1993 to establish protected and buffer areas in Indonesian forestlands (Kramer 1996). Conservation of the forests was importantly to be part of an 'integrated conservation management plan', which was supposed to include local people who lived on the periphery of protected forests, so that livelihoods dependent on forestland would not be detrimentally affected by the strict enforcement of these restricted forest zones (Kramer 1996). One of the ways that this was to be established was through the promotion of ecotourism, which was supposed to create a means of livelihood for local people, so they could continue to benefit from the protected forest land (ADB 1992).

Martha Honey (1999) critically assesses ecotourism projects such as these that began in the mid 1980s. At that time the World Bank and other world lending

bodies were criticized for their support of insensitive tourism developments in Third World countries, which had exacerbated rural poverty, while enriching foreign investors and national elites. The shift to 'ecotourism', and the creation of the 'Global Environment Facility' in the 1990s to specifically integrate environmental concerns with developmental needs (Honey 1999:16), was to convince the Third World that the bank had become socially and environmentally responsible. Thus, international aid and funding agencies put a considerable amount of emphasis on ecotourism projects in the 1990s; one of these was the TWAR in Ruteng. Indeed, the head of TWAR had high hopes to promote ecotourism in the enclaves, suggesting that the local people could make money performing rituals for tourists and not have to cut down the forest and open up more land for agriculture. However, he admitted that TWAR officials had had quite a lot of trouble with villagers, but insisted that the local people were in the wrong, because they insisted on working within the boundaries of the protected forests.

Many villagers, on the other hand, claimed that it was the TWAR project that had caused nothing but trouble for them. We asked how far people had been included in the project, since this was the main aim of the ADB 'integrated conservation plan', which had been receiving funding up to 2000. The enclave villagers felt they had not benefited from the project. They told how various consultants visited the villages on the edge of the forest and interrogated the local people about what plants grew in the forest, and what local uses there were for them. Then they would return to the town and report how to protect the forest from local abuse, and be paid substantially for it. The villagers were angry since the 'experts came to us for the knowledge' and were paid for it, but the villagers were paid nothing for their time and information. The only villagers who were given work from the funds of the project were paid as 'guards' to keep out other villagers. So instead of 'integrating' the villagers into the park and conservation plans, the villagers were being almost entirely, and forcefully, excluded from land that they had previously had access to. People we spoke to felt that they were being 'exited' from the park lands, and from their point of view, it would have been better if the project had never been initiated. In their understanding, the ADB project was not a project about 'people', but a project about 'trees' and how to keep the people away from them.

Some members of local NGOs in the town of Ruteng had been involved in the ADB project, or had seen how it operated; they complained the project was riddled with corruption, mismanagement of money and disregard for conservation. Some saw it as a front for a bigger operation in the planning stages; one activist said he had seen satellite maps that showed a lot of gold in northern Flores. The widening of the TWAR boundaries to include more of the forests was

to take this land away from villagers and then invite foreign investors to mine for gold. Local NGOs also defended the villagers on the border of the forest. The project had been funded because of the unique montane biodiversity of the Ruteng forests, but instead much of the area designated as 'forest land' had long ago been logged out by corrupt forest officials. Certain areas, notably near Colol, were actually covered with weeds, but people were still kept out, and a number of farmers had been jailed in 2000 for trying to clear the weeds and open up fields.

Assessing the findings of some consultants involved in the project, it appears the government did not seem to utilize these findings to inform their later policies. The reports emphasized the importance of including the local people, 'the stakeholders', in plans to protect the forests. Randall Kramer (1996), with a team of researchers, surveyed 494 farming households and 97 logging households highly dependent on the forest, and found that a large percentage of those surveyed, even the logging families who were engaged in illegal activities, agreed with the necessity to protect the forests for hydrological purposes. Most illegal logging families were willing to pay licence fees if they were made available, and the agricultural families were willing to adopt farming methods that would help to preserve the forest. Clearly, the original willingness to cooperate with the project deteriorated over time, when the villagers in the buffer zone and enclaves of the forest areas were not directly involved in any plans to manage the forest. Kramer's research showed that illegal loggers had been involved in logging for generations; in general these families had little education and no land. They came from parts of Ruteng town that were the original hamlets of the town, opened by the Dutch for administration in the early twentieth century (see Lawang 1989; Toda 1989; Erb 1999), and where people had willingly given over land for government offices. Over the generations these families had become increasingly landless. Therefore, these illegal logging families are basically the marginal urban population of Ruteng, who can only make a living by supplying wood for building needs of various peoples and projects in Manggarai.

What is evident then from Kramer's research is that the poorest, and the least educated, turn to becoming wood cutters. If the government was truly concerned about finding alternative livelihoods for those who encroach on the forests, they would pay attention to these families in particular.[2] Instead, the government leaders who took charge at the end of the ADB project to fund the TWAR (from 1995 to 2000) adopted a policy that made more and more people landless.

Saving forests in the era of reform

Primum vivere, deinde conservare – first life, then conservation. (Eman J. Embu and Robert Mirsel, *Gugat: Darah Petani Kopi Manggarai*, 2004:x.)

The regent who took over the Manggaraian government in the 1999–2004 'reform period' after the end of Suharto's New Order saw land conflict, not landlessness, as the major problem of his district. Land conflict had been a major concern of the previous regent to the extent that he commissioned a study on land conflict (Lawang 1999); other researchers were concerned with the issue as well (Ruwiastuti 2000). Horizontal conflicts were mostly between villages that had long-term ties of marriage or kinship, and with the eroding of traditional relationships the types of rights and responsibilities embedded within these customary connections were forgotten or ignored, a process that Lawang (1999) called 'de-Manggaraisasi' – 'loss of Manggaraian identity'. Vertical conflicts occurred when people reclaimed the land of their ancestral communities that had been taken over, often by the government, for some particular purpose during the New Order. Often because of the increasing value of land, people felt they had not been compensated enough for the land.[3] Hence, land conflict became even more of a concern for the 'reform administration', who gave a considerable amount of vocal space to the idea of returning to *secara adat* – the 'adat way' – to resolve conflicts, though many claimed that this 'return' was more for show than an actual revival of customary measures of conflict resolution (see Erb 2003, 2005; Erb *et al*. 2005). At the same time considerable concern was shown for issues of deforestation and environmental degradation in the Manggarai regency. Traditional water sources for the town of Ruteng were starting to dry up, while there was flooding in the coastal areas; both gave cause for alarm that Manggaraian forests were disappearing. These two issues, environmental degradation and land conflict, were considered to be linked by the reform era regent; hence, he was determined to solve this problem.

In 2002, the local government was given funding by the central government (Anggaran Pendapatan dan Pembelanjaan Daerah (APBD), Regional Budget) for the *reboisasi* – 're-greening' – of Manggarai (TARM 2004:10). After this funding was allocated, the regent issued a decree forming 'a combined team to clean up and protect the forests of Manggarai' (TARM 2004). What 'cleaning up' the forests meant was getting rid of all the cash crop trees, mostly coffee, that the government claimed had been planted in 'protected forests'. Coffee was identified as the main culprit of ecological degradation, loss of ground water and erosion. So, in October 2002, the first operations began in Meler village, west of Ruteng; various government officials, army, police and hundreds of high-school students from Ruteng entered Meler land, chain-sawed down their coffee, candlenut, vanilla and clove trees, and burned down their houses, clearing altogether 2000 hectares of land. Many people were traumatized by this experience, and eight were arrested (TARM 2003). Local NGOs supported the villagers in massive protests, but those people who returned to the land were arrested, as were some

NGO advocates who supported them. Other advocates, worried about further arrests, travelled to Jakarta to seek help from environmental NGOs such as Wahana Lingkungan Hidup (WALHI) and Sekretariat Kerjasama Pelestarian Hutan Indonesia (The Indonesian NGOs Network for Forest Conservation) (SKEPHI), as well as legal aid societies. These organizations saw in the heavy-handed approach of the Manggarai regent a clear assault against indigenous peoples' rights, and hence rallied to the aid of the farmers and their advocates in Ruteng. They formed a group entitled TARM (Tim Advokasi Raykat Manggarai – 'Advocates for the Manggaraian people') and defended the farmers who were on trial for being *perambah hutan* ('illegal users of the forest'), claiming they were instead *masyarakat adat* (an 'adat community' or 'indigenous people') who were using the land of their ancestors.[4]

Despite the outrage that the first chain-sawing incident had caused, in October 2003 the regent continued the procedures in the east, in the village area of Colol. The Colol land was controversial, because in 1999 the TWAR had already gone into some of their *lingkos* and pulled up coffee and other trees. The *adat* leader at the time had reported the TWAR officials to the police in Ruteng, with the intention of fighting the case legally. The police had told the villagers to return to their fields and pretend that nothing had happened, since, they were informed, the TWAR officials had been mistaken. The *adat* leader hence never filed a lawsuit. However, in 2000, the police, TWAR and forestry officials had gone to the same locations and again arrested several people who were working there. Subsequently, the TWAR reported the *adat* leaders to the courts and filed a lawsuit. This suit was still in a state of appeal (Tim-ISPM 2004:79). Hence, when in October 2003, the government started to clear the coffee trees in those areas, they were ignoring the fact that this land was still in a state of legal battle.

Further communications between Colol villagers and the government appeared to be equally deceptive. In 2002, after the Meler operation, the local government informed the Colol villagers that they would be 'cleaning up and protecting the forests' in their area as well; however, they would only be clearing trees from lands recently utilized, which the government claimed was 'protected forest'. At that meeting Colol villagers confessed their confusion as to the boundaries of the forest land; the government officials promised that they would investigate the problem, together with the villagers, and subsequently they would make a clear decision in an open forum. However, the forum and investigation never took place, and the land cleared in October 2003 was not land that had been newly opened, but instead land that had been used for generations by the villagers (Aur 2004:106–107).

The operation in Colol was similar to the one in Meler, and was led personally by the regent (TARM 2004:6), and included the police, the courts, the army and

forestry officials. However, reports seem to indicate that the level of belligerence and violence shown towards the villagers in Colol was greater than that shown in Meler. Not only did they cut down all of the villagers' valuable trees and burn their houses, but they also took anything they wanted from the villagers' property: livestock, food, household utensils and garden equipment. This plundering was accompanied by constant threats and sexual insults (Aur 2004:107).

What brought the case of Colol to national attention were the events of 2004. In early March, government officials went to several locations in Colol, checking on the various locations that were still under investigation and appeal. These officials told the villagers they would have to leave the land, but they refused to do so. On 9 March, officials returned with the police and the regent himself and arrested four women and three men, one of them an elder, who were in the fields digging various root crops, as 'illegal forest cutters'. They were taken to the Ruteng police station, and scolded and rebuked by the police until midnight (KOMNAS HAM 2004:85). In the villages, people were concerned about what they considered to be the 'kidnapping' of their family/fellow villagers and made plans to go to Ruteng the next day, but the village leader emphasized the need to act peacefully (Tim I-SPM 2004:63). The next morning three trucks left for Ruteng with approximately 120 people, many of whom were unaware or unclear about the 'kidnapping' (Tim I-SPM 2004:65). The police were expecting trouble; hence, when the trucks arrived at the station and the designated spokesman from Colol descended from the truck to enter the police station, the police refused to allow any others to follow. A struggle ensued, and the police started to shoot (Tim I-SPM 2004:68). Seeing trouble brewing, the spokesman tried to retreat; however, others, remembering their kinsmen being held in the station, tried to force their way in. Police, feeling threatened, emerged with more weapons and started shooting, chasing villagers who tried to run away. In the end, 4 men who were shot died on the spot, 2 later died in hospital and 28 others were taken to the hospital, many of whom were seriously injured.

These events caused great controversy at the national level. The Human Rights Commission investigated, so did the Franciscan Justice and Peace Commission, along with multiple other external observers (Hindup 2004). The regent insisted, despite his heavy-handed approach, that forcibly moving villagers off protected forest land is the only way to save Manggaraian forests and preserve water for future use. In addition, it is the only way to maintain peace in Manggarai. In a typical 'green-war' type of interpretation of events, he saw conflict in Manggarai as due to environmental deterioration. He saw his programmes as pre-emptive: it was better to have the government act aggressively, then to have battles break out between villages because of lack of water. According to reports from the Indonesian Environmental Network (WALHI 2003), however, the local

government had in fact signed six contracts for industrial forest concessions with teak and mahogany plantation investors, and so needed to get the villagers off the land. Despite his claims to be concerned with water conservation, it is highly questionable whether teak and mahogany will be any more environmentally beneficial than coffee towards groundwater loss and the ecological changes in the Manggaraian landscape (Prior 2003; Parera 2004). Whether or not there were other such economic benefits for the local government, local NGOs charged that the 'regreening' agenda was instituted because a lot of money would be given by the central government for this programme. In the end 'tidying up' and 'regreening' entailed no planting of trees, but only the cutting down of villagers' cash crops, leaving mountainsides barren and far more vulnerable to erosion than they had been with the decades-old coffee trees.

Becoming Manggaraians again: problems with identity and language

A considerable outcry went up because of the shootings in Ruteng, and much attention was given to investigating all the events that led up to them. Not only were there investigations into the whole history of the coffee clearing operations and the history of contestations over the 'forested land', but also various NGOs contested the idea that Manggaraian farmers need someone else to 'conserve' the forest for them. Advocates for Manggaraians, such as WALHI, challenged the idea that traditional Manggaraian economic life was ecologically destructive, but instead that they knew 'conservation' in their traditional workings of the land (TARM 2004). Legal aid societies constructed a defence for Manggaraian farmers based on their being 'indigenous', and that indigenous people have a harmonious and balanced relationship with their environment. This relationship had gone out of sync because of government policy during the New Order and capitalism. The TARM rallying cry to 'try to become Manggaraian again' ('Mencoba [lagi] menjadi orang Manggarai') implies that, now, during the era of regional autonomy and democratization, it has become possible to regain control over their land and property, as well as the decisions as to what to do with them, and hence become again 'environmentally friendly'.

According to the investigations of some local NGO groups, Manggaraians believed that the forests were sacred places. There is a difference between *puar*, which is forest that human beings can freely use, and *pong*, which is deep forest, the realm of the spirits. *Puar* can be opened for agricultural use and then, after several years of use, is left to go fallow again, for perhaps as many as 20 to 30 years. *Pong*, on the other hand, is never used for agricultural purposes. It is in

puar that people find firewood, and various other kinds of woods are taken for building fences and the like. *Pong* is only visited to search out things like honey, cinnamon, rattan, birds' nests and other non-wood products (Mirsel 2004:44–45). People are reluctant to visit *pong* too frequently, and it is in these deep forests, normally located on the tops of high mountains, such as those around Ruteng, where springs and water sources are protected; catchment areas were traditionally guarded by these traditional beliefs.

Non-governmental organizations also investigated the problem of water catchment and the increasing problem of drought in Manggarai. They attribute the problem of the drying-up of springs not to coffee, but instead to the planting of *ampupu* (a type of eucalyptus) by the government starting around 30 years ago. In a small film initiative by a local NGO, a villager relates how *ampupu* seemed a good idea at the time, since it was fast growing and created a lot of shade. For villagers it seemed to be 'forest'. And yet their problems with water started after the planting of *ampupu*, when the springs started to dry up. *Ampupu* is, in fact, used for drying up wetlands and not for water conservation. Several village projects are now involved in replanting trees around springs, which according to traditional knowledge help to preserve water. These trees include bamboo, banana and, in fact, coffee (Asprida & Telapak 2003).

Local and national NGOs want to underscore traditional local knowledge of the environment as actually very 'conservation' oriented. Ironically, as mentioned above, the earlier integrated programme funded by the ADB also sought out local practices and use of the forests, hiring experts to document this material, and yet the material was never used in a way that benefited the villagers. Government support for *adat* would seem to imply also that local practices may have a positive benefit for solving Manggaraian problems. Ironically, however, their support for *adat* did not include recognizing traditional land claims, or traditional relationships with the environment as being those of 'conservation'.

Recent arguments have contested the claims that 'indigenous' populations could have an awareness of conservation, either in their earlier low demographic state, when there was no need to think about conserving resources (Holt 2005), or in the conditions of higher population and more intensive use of resources (Kramer *et al.* 1997; Terborgh 1999); for this reason some advocate the return to forceful policing of endangered environments. Although Holt makes the point that conservation awareness is not likely to arise under conditions where resources are abundant (2005:207–208), as would have been the case in Manggarai several decades ago, she does make a case for the emerging awareness of a need for conservation in the developing world, just as happened in 'the West', which some conservation biologists seem to think has a monopoly on the logic and rationality to understand conservation. It is precisely this rising

awareness of the need to conserve the forest that has led some villagers to set up their own programmes to plant trees and stop cutting down those in the state forests, and others to seek traditional ideas that can be adapted to a conservation ideology. The assumption on the part of the government, as well as the international experts who took knowledge from the villagers but never worked with them, is that Manggaraian villagers have no ability to be really involved in making plans to save the forested land.

Government policies towards the forests certainly do not see them as 'sacred', but instead as a 'resource'. 'Resources' must be protected for proper use and, as Timothy Luke points out, the word 'environ' comes from Old French, meaning to 'enclose', 'encircle'; 'to environ a site or subject is to beset, beleaguer, or besiege it' (1997:185). The concomitant to seeing nature as 'exploitable' is that it must be 'protected' in order to be eventually exploited in the 'proper' way. These aggressive, hidden meanings in the word 'environment' seem to be behind the Manggaraian government's philosophy of conservation, as an excuse for 'pre-emptive' aggression towards villagers who were using land suspected of being 'forest land'.

However, many Manggaraian people seem very confused about what 'forest' really is. For Manggaraian people it was shown that 'forest' is divided into various types. What the government calls 'forest' and what villagers call forest seem to have little connection. Aren't coffee trees 'forest'? Are fields of weeds that the government calls 'forest' really more 'forest' than coffee and other trees villagers have planted that grow in forested areas? The ADB project was ostensibly to protect 'biodiversity' in those forests, and yet the enforcement of the boundaries was over land that had lost its biodiversity. Hence many people could not understand why farmers were not allowed to use this land, especially since they claimed it was their ancestral land. The confusion over 'forest' also holds for 'illegal users' of those forests. 'Illegal use' assumes 'trespassing' – but whose land is it? From what has been said above, the boundaries appear to have changed over the years, and the boundaries continued to be contested, so who could be said to be 'trespassing' on that land? One investigator of the Colol case also questions the 'destruction' of the forests (Parera 2004:116–117). What should be considered 'ruined' forests in Manggarai? And what are the causes of this destruction? Is it the village people, who have been living on the edges of these forests for generations, or other users of the forests, who have been involved in overusing and exploiting them to destruction? This is not a simple matter, and it cannot be simply dealt with by criminalizing and jailing particular individuals.

At the time of writing, the situation has improved for Colol, and for all Manggaraian villagers. The regent who cut down their coffee trees lost the election, by popular vote, in July 2005 and was not returned to office. The newly

elected regent has promised not to take drastic measures to 'clean up' the forests of Manggarai, and their coffee trees are indeed growing back. It seems, ultimately, the struggle for Manggaraian villagers revolves around a 'soul-searching' at this time of regional/local autonomy, as to what it actually means to 'be Manggaraian'. Protestors in Yogyakarta over the death of the farmers on 10 March accused the regent of 'not being Manggaraian'; the TARM advocates argue that the people desire to be 'Manggaraian' again, while Robert Lawang (1999) argues indeed that people have lost their 'Manggaraian identity'; the previous regent himself had voiced his desire to bring back Manggaraian culture and resolve conflicts 'the Manggaraian way' (*secara adat Manggarai*). However, what it means to 'be Manggaraian' is not a static thing, and there is a necessity to come to terms with new realities of livelihood and conservation, both on the part of the local people, as well as the government, or quite possibly conflicts will appear again.

Conclusions and summary

Our review of the ADB project to create the Ruteng Nature Recreation Park and conserve a unique forestland in eastern Indonesia has tried to expose a number of different ideas underlying conservation. The original project was couched in the rhetoric of 'integration'. People and trees needed to be at peace with one another, and understand one another's needs. The ADB proposal used 'people' as part of its selling point, but we feel in this sense that people were used as a kind of 'commodity'. They were written into the original idea of 'integration', but ultimately were never integrated. The end result was an emphasis not on the 'people', but on the 'trees' to the exclusion of the people. The real problems that the people faced were never addressed by the local government. If people are to allow certain lands to remain forested, then they will need alternative locations to fulfil their basic daily needs for wood and products originating from these forests. This, ultimately, was not well planned out in the ADB scheme. We feel there was a lack of a time perspective in the project. It emphasized the idea of 'ecotourism' as the ultimate benefit for the local people, but this was a kind of fantasy, an idea with unclear associations in the mind of enclave villagers. How were they to make a living from ecotourism? This was never actually worked out in a practical way. And yet the needs of daily existence continued, and no alternatives were offered.

The importance of 'people-centred conservation', different kinds of time lines, and recognition of the present realities of local communities are also argued for by Holt (2005:212). Local people have the right to be treated respectfully and not as criminals, as they were by the Manggaraian government

during the 1999–2004 period. They have a right to receive knowledge, not just give it, and to be involved in the decision-making processes about how best to conserve forests and other natural resources in Manggarai.

A green-war perspective on environmental degradation, such as that behind the programmes of the government of the 1999–2004 period, similarly results in the kind of 'resurgent protectionist perspectives' advocated by some recent environmentalists who want to protect biodiversity by creating exclusive protected areas. This ignores the global links that create a greater value and greater demand on the resources in a particular place, and the biohistory of a place, which developed in connection with human beings. At the same time it also refuses to recognize the ability of local communities to change and to incorporate a perspective that will be 'conservation oriented', by allowing them to see those resources as something that will continue to benefit them, and hence as theirs to protect.

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End notes

1. If the TWAR head's chronology is followed, indicating that the boundaries were set down in 1933, this means they were actually awarded after the boundaries were fixed.
2. In research around Ruteng in 2000, we found out about one village of 'illegal loggers', who had themselves given up illegal logging and formed an NGO dedicated to planting hardwood trees that they themselves could harvest in the future. They received no aid from the government, and had done this entirely on their own (see Erb 2001).
3. This was widespread, and far worse, in other parts of Indonesia (see Lucas and Warren 2003).
4. See Acciaioli (Chapter 18), this volume, as well as Li (2000) for further discussion of the recent emergence of an 'indigenous peoples' movement in Indonesia as a means of reclaiming land rights in Indonesia.

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17

Seas of discontent: conflicting knowledge paradigms within Indonesia's marine environmental arena

CHRIS MAJORS

An environmental ethic requires that human behaviour be modified to agree with the ecology of the world, not the world be rearranged to suit human desires.

(Meeker 1980)

Introduction

Conservation of the world's marine biological diversity has increasingly come to rely upon the establishment of formally designated protected areas. Whilst the overriding priority for such areas remains the conservation of marine habitats and associated biodiversity, environmentalists also widely recognize that the management of such areas cannot ignore the broad array of human interests and needs often associated with densely populated coastal regions. This understanding has led to the development of so-called 'integrated' approaches to marine management that environmentalists believe will enable important conservation goals to be achieved, whilst also accommodating the diverse needs of different user groups.[1] Such approaches have come to rely heavily upon the creation of multiple-purpose management strategies that include the designation of different resource-usage zones, developing strict regulations and permit systems for the control of exploitative practices, as well as actively engaging in various forms of public education and awareness raising.[2] In the face of major

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challenges associated with addressing issues of biodiversity loss and resource decline, Marine Protected Areas (MPAs) are today being widely promoted as a valuable strategy for marine conservation efforts globally.

Without urgent intervention, such as that proposed by a well-managed network of MPAs, it is argued that biologically diverse marine environments will continue to face ongoing decline and degradation with little future prospect for rehabilitation and protection (The Nature Conservancy 2006). The application of an MPA model is seen as being particularly relevant to less-developed countries, where much of the world's marine biodiversity is found and where threats to the marine environment are known to be particularly severe. In Indonesia, a country supporting extremely high rates of marine biodiversity, threats facing the marine environment are today seen to have reached alarming levels. A rapidly expanding and increasingly mobile human population, emerging international markets for valuable marine commodities, lack of defensible marine boundaries, as well as conflicting government policies at national and district levels, are just some of the issues currently facing marine conservation efforts in that country.[3] In addressing the wide range of social, political and economic issues that are known to affect natural-resource conservation within Indonesia, there today exists a very real need to identify specific issues relevant to promoting the effective management of MPAs.

One key area of concern in the establishment of MPAs is the socio–economic and cultural aspects of fisheries management. To what extent formal management regimes can be readily transferred to a developing-world context remains unclear. The challenges associated with incorporating subsistence fishing communities, which have a long history of dependency upon marine resources, within a modern, scientifically driven environmental agenda are likely to be significant.[4] The rules, regulations and maximum yield quotas often associated with the imposition of an MPA create a situation in which conservation policies and regulations may be seen as conflicting with knowledge and resource-use practices that continue to be upheld by local communities. Potential conflict arising from MPA establishment has led to growing calls for greater local participation in the management of such areas.[5] Whilst participatory approaches are today increasingly being employed within MPAs, to what extent these efforts are able to overcome existing social barriers and other perceived local limitations is unclear. Whilst science-based knowledge paradigms upon which MPA initiatives are commonly framed remain critical points of reference, how such knowledge is understood by local communities and under what conditions it is likely to be deemed acceptable represents an important field of ongoing investigation (see also Chapter 14).

This chapter examines underlying differences that characterize the way in which environmentalists and local fishing communities understand important issues relevant to the marine environment and its conservation. Specifically, it is concerned with the different knowledges, perspectives and interests that underlie environmentalist–community engagements within one of Indonesia's many officially designated MPAs. In so doing it raises a series of important questions relevant to incorporating communities within a larger environmental framework. To what extent do local communities share knowledge paradigms to which environmentalists closely adhere and within which they seek to frame these communities? Do scientific understandings of the environment upon which environmental initiatives are often founded contradict or support local understandings? (see Colchester 2005) And, more specifically, to what degree are environmental agendas, driven by issues of resource decline and biodiversity loss, recognized and accepted by coastal communities and their component groups? Addressing these and related questions is seen as a critical first step to locating important 'middle-ground' upon which specific resource–management outcomes can be achieved that reflect both current environmental concerns and existing social limitations.

This study builds upon recent critiques of community within environmental literature that seek to refute stereotyped images and assumptions conveyed by the concept.[6] As such, it serves to highlight the need to move beyond calls for participation to which environmental programmes now widely adhere, and instead recognize the social and political complexities that inevitably characterize communities with which environmentalists seek to work.[7] Critical to this statement is understanding the capacity communities themselves have for change in being able to meet expectations held of them by environmentalists. If communities are seen to support their own knowledge paradigms and institutional structures that remain deeply embedded within their larger societies, and these are seen to contradict 'outsider' views of 'community' and the types of intervention required to address serious environmental concerns, opportunities for collaboration and participation by communities are likely to be seen as extremely limited.

The study is located within the larger biogeographic region of eastern Indonesia. It is a region that is already characterized by an extensive network of MPAs and one where the environmental stakes are considered to be particularly high.[8] Recently, an influx of international non-governmental organizations (NGOs) and donor funding, promising significant financial resources as well as providing human expertise, offer renewed hope for MPAs in the region that until recently have been considered little more than so-called 'paper parks'. However, it is also a region where conservation agendas are likely to be

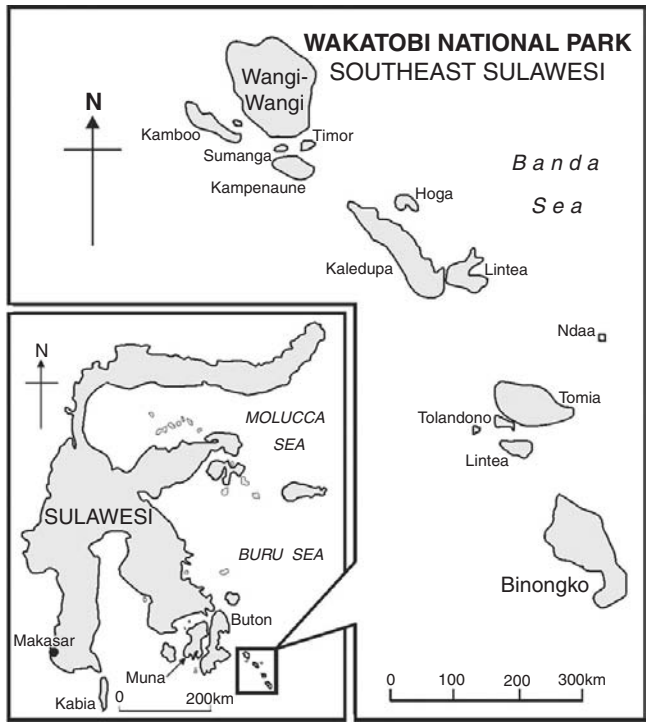

Figure 17.1. Wakatobi National Park.

immersed within a diverse array of different ethnic identities with which environmentalists must ultimately negotiate and work.[9] Understanding how diverse local cultures can be meaningfully incorporated within modern conservation agendas, such as those associated with MPAs now being implemented with renewed vigour across the region, remains a critical area of ongoing research.

Key elements of an MPA agenda: Wakatobi Marine Park

Wakatobi is Indonesia's second largest and arguably one of its most important MPAs (Fig. 17.1). Wakatobi is an acronym that refers to the four main islands that are encompassed within the park boundaries. These islands are Wangi-Wangi, Kaledupa, Tomia and Binongko. Established in 1996, Wakatobi has only recently become the focus of concerted environmental efforts with conservation organizations and international donor agencies identifying the area as a priority for their activities within Indonesia. The World Bank Coremap programme and a consortium involving The Nature Conservancy (TNC) and the World Wide Fund for Nature (WWF) have made significant commitments to

conservation projects in the region. Both programmes are working in close cooperation with the BTNKW (*Balai Taman Nasional Kepulauan Wakatobi* – National Park Authority of Wakatobi), the government authority responsible for the management of the marine park.[10]

Enforcement and illegal fishing

According to environmentalists it is the use of destructive fishing practices more than any other factor that has contributed towards the widespread degradation of Wakatobi's unique marine environment. Destructive fishing is carried out across the region, and it is widely believed this activity has already accounted for the loss of large areas of coral reefs that have been blasted and poisoned with little hope of recovery. Both blast- and cyanide-fishing practices are used routinely by fishing communities found within Wakatobi. In response, environmentalists recognize the urgent need to stop such practices in order to halt the ongoing decline and degradation of coral reefs. Recently, there have been renewed efforts to stop the illegal use of cyanide- and blast-fishing within Wakatobi. Significant funding from TNC and Coremap have considerably strengthened the capacity of the government to undertake a regular and effective monitoring and surveillance programme. This has been coupled with training programmes for park rangers. As a result of regular patrols now being undertaken for the first time within the marine park, park rangers have been able to apprehend and guard against the use of destructive fishing practices within Wakatobi. Since 2003, significant numbers of fishers have been apprehended and imprisoned by the park authority, and this has likely contributed to a decrease in the incidence of such practices.[11] Patrolling is likely to continue with even more vigour in the near future as substantial new resources are made available by TNC and Coremap, which both strongly support the use of enforcement to achieve environmental objectives. Their programmes have set targets for the reduction of destructive fishing practices within Wakatobi. A new patrol vessel is currently being prepared for Wakatobi, and Coremap plans to introduce a mechanism for detecting cyanide in fish. Finally, environmentalists have also sought to involve communities in the enforcement process. Coremap has proposed a Reefwater programme, hoping to take advantage of local knowledge, whereby members of the community are involved in patrolling and relaying information back to enforcement agencies.

In addition to curtailing the negative impacts of destructive fishing practices, environmentalists have also sought to outlaw the rampant exploitation of protected species that persists within Wakatobi. Local fishers are known to

exploit stocks of giant clams (*Tridacna gigas*), green turtles (*Chelonia mydas*) and Napoleon wrasse (*Cheilinus undulates*), all of which have protected status under Indonesian law. Whilst giant clams are taken for local consumption, green turtles and Napoleon wrasse comprise part of a lucrative live export trade upon which communities have increasingly come to rely. As in the case of destructive fishing, the response of environmentalists has been a crackdown on such activities. In recent years I have observed the activities of park rangers that have included the confiscation of clams collected by fishers, as well as the forced release of Napoleon wrasse and turtles recently caught by fishers.[12] In one such case environmentalists coordinated a government 'raid' on captured turtles being illegally held in one particular fishing village that resulted in the confiscation and release of some 60 turtles. This was done in the presence of local political leaders and international scientists (and was recorded by television cameras) who reported the event as a conservation success story. Park rangers have also been involved in outlawing the collection of 'coral', a common activity undertaken within Wakatobi and used for construction purposes by local fishing villages. Coral mining also represents a major threat to the marine environment and, like destructive fishing and the capture of protected species, has become a key target of enforcement efforts within Wakatobi.

No-take areas

Effective conservation of the marine environment, including the sustainable management of marine resources, will require more comprehensive approaches to management than those achieved by preventing illegal fishing alone. In recent years, environmentalists have highlighted the importance of establishing no-take areas (NTAs) as an effective means by which to protect marine resources (TNC 2006; Coremap Phase 2 draft implementation plan, personal communication). Such areas, which seek to prevent all fishing activities from taking place within particular boundaries, have already been widely applied and are increasingly being seen as an important management tool, particularly for less-developed countries.[13] There exists strong empirical evidence in support of NTAs to maintain both species diversity and fish populations as a sustainable resource.[14] Studies show that such areas have not only led to dramatic increases in fish stocks within reserves, but importantly these have also led to significant improvements in the level of fish catches being made in areas adjacent to these reserves. This net benefit to fishers, despite a reduction in the overall fishing area, is seen by environmentalists as critical to gaining support locally for the establishment of such areas. No-take areas are seen as being particularly important for the retention of large, slow growing

species, as well as high value commercial species that are considered particularly vulnerable to fishing activity.[15]

In the specific case of Wakatobi, NTAs represent a critical part of the long-term plans for environmentalists working in the area. Environmental programmes currently proposed for Wakatobi place a high emphasis on establishing a network of NTAs that has extensive coverage throughout the park.[16]

The major element of the collaborative resource-management component will be the district-wide implementation of NTAs. Generally championed by conservation organizations, NTAs are rapidly being assessed as the tool of last resort for fisheries management. Promoted as a community-owned resource that will ensure long-term fishing viability, it is suggested that NTAs be repackaged as '*Tabungan*' or community deposit accounts banks that every community should have. This allegory can be developed to be high-interest rate accounts if spawning sites are protected, etc.[17]

Environmentalists also envisage that NTAs will form part of a more comprehensive zonation strategy within Wakatobi. In particular, they highlight the importance of locating NTAs in relation to high biodiversity areas and the need for 'guiding ecological principles' that will ensure such areas facilitate a sustainable management regime, as well as enabling effective conservation of important marine biodiversity. The approach emphasizes that the designation of such sites needs to be based upon the best minimal area to achieve objectives that conform to both conservation and sustainable resource-use criteria. While recognizing that community interest and involvement are certainly essential to the process, they warn against allowing acting in the best interests of communities to override the process, since the interests of communities may not result in the best outcomes for the environment. Finally, environmentalists seek to emphasize the connectivity of NTAs and their role within a larger integrated landscape.

In advocating NTAs, environmentalists have also sought to place particular emphasis upon spawning aggregation sites as habitats in need of special protection. Across Wakatobi dozens of these sites are known to exist and are deemed particularly important to enable the reproduction and replenishment of highly valued grouper stocks for those species known to reproduce in this way. During particular lunar phases such sites are frequented by aggregations of fish preparing to spawn, an event that makes them particularly vulnerable to the activities of fishers and hence in need of special protection. This has led environmentalists to give high priority to the important task of identifying and monitoring such sites. In fact, local communities hold detailed knowledge of these sites, which has facilitated the efforts of environmentalists in determining their exact position.

Awareness raising

A third important aspect of environmental programmes in Wakatobi is the attempt to raise environmental awareness amongst communities in order to improve local knowledge and understanding of the marine environment. Environmentalists assume that the decline and degradation of the marine environment is due to poor levels of understanding by communities, and that this can be addressed by providing relevant information.[18] In particular, it is argued communities are unaware of the negative impacts their activities are having on the environment.

Hence, environmentalists have sought to focus on education and awareness-raising for communities as a means to change the way local communities currently think and behave in relation to their environment. Environmental programmes also suggest that by attempting to 'socialize' park management plans throughout Wakatobi using participatory techniques, local communities and stakeholders will feel a sense of 'ownership' in the management of the park's coral reef ecosystem resources.

Both Coremap and WWF/TNC programmes rely heavily upon awareness-raising amongst Bajo communities of Wakatobi to provide the catalyst for active participation and change. Environmentalists do recognize the need to work with local communities in addressing important environmental issues. Whilst communities are a source of many of the problems associated with Wakatobi's marine environment, as a result of illegal and other destructive fishing practices, improved environmental outcomes will not be achieved without the support and cooperation of these communities. Environmental groups have conducted outreach programmes with local communities highlighting the marine park and its role in conservation. These have involved the establishment of information centres, as well as the holding of workshops. They have also attempted to gain specific information about communities that could assist in the design of these programmes. Coremap has also proposed the creation of strategic plans at the district level, which will serve to 'guide villages' in the selection of appropriate protected areas ensuring, amongst other criteria, that reserves are representative of the array of different habitats found within a given area. Communities' 'management teams' will initially be involved in resource assessment and mapping activities, as well as an ongoing process of undertaking resource surveys and measuring change. A key output of this process is that each village would create its own 'resource-management-plans' that would be endorsed by village heads and approved by village councils, under provisions for community authority to issue local ordinances (*perda*).

Sea nomad science

Within Wakatobi it is the indigenous fishing populations belonging to an ethnic group of peoples known as the Bajo that have come to dominate fishing within the marine park.[19] The Bajo belong to an ethnic group of peoples that is spread widely across the region, a distribution that reflects a past lifestyle when they moved as 'nomadic' family units in small boats. Today, in Wakatobi as elsewhere, the Bajo are settled in villages located on shallow intertidal marine flats. The close relationship the Bajo hold with their marine environment is one developed over generations. This relationship is reflected in the deep and profound knowledge the Bajo hold of the marine environment that they rely upon as a source of livelihood. They have a detailed knowledge of the behaviour and ecology of a broad range of different species,[20] and of where and when particular species can be found. They understand how particular species behaviours are impacted by tidal and lunar events. They have knowledge of specific spawning events, as well as the movement of different species across different habitats from deep water to shallow water. The Bajo hold detailed knowledge of the habitats associated with different species, including feeding patterns, migration routes, spawning and nursery areas, and other information.

Resource decline

Given the high level of local knowledge held by the Bajo, I was keen to understand how the Bajo themselves understood issues of resource decline that were widely reported within Wakatobi. Given the high level of dependency the Bajo have upon marine resources, one would expect the Bajo to be both aware of such declines, as well as highly concerned. Whilst many fishers indeed recognized that fish stocks have declined, and that this was having a detrimental impact upon them and their families, surprisingly these views were by no means those expressed by all Bajo fishers. Instead, I was faced with an unexpectedly diverse array of thoughts and opinions as to what the state of local fish resources was, and how it was caused. While some informants readily acknowledged that fishing was far more difficult and time consuming than it had been in the past, others merely conceded this when pushed, and expressed little concern. Still others questioned the notion that fish stocks had declined at all. These differences in opinion appear to depend upon the variations in individual circumstances, including the specific techniques employed, where their fishing was practised, the capacity to meet household needs, and the amount of mobility.

The Bajo utilize a range of different fishing practices, operate in different habitats and target different species. Whilst it is not uncommon for fishers to

utilize diverse fishing methods, most fishers have preferred fishing techniques and target particular species, and so knowledge of the marine environment is closely linked to these specific techniques, and the vulnerability of different species targeted by these practices. Fishers who did not support the idea that fish stocks had declined tended to be fishers who focused their fishing efforts in deep-water environments, such as along the reef wall and at offshore sites, where the impacts of overfishing are likely to be much less obvious. Additionally, these habitats are exploited by more traditional fishing methods, such as line-and-spear fishing, which are associated with sustainable levels of fishing pressure and do not lead to overfishing. In contrast, those fishers who relied upon shallow intertidal habitats located near the village had seen a large influx of nets into the community over the past decade and were the ones who felt the resource decline. Nets have an impact upon a diverse array of species, and the use of a range of different mesh sizes impacts both juvenile as well as adult fish stocks. Additionally, the intertidal areas are the most readily accessed habitat; not only men, but also women and children glean sea cucumbers and other invertebrates, hunt for octopus, set nets, line fish and mine coral, to name just some of the most intensive resource uses.

Also important in understanding local perceptions of resource decline was how the Bajo emphasized the fact that good catches could still be made and were more inclined to believe that changes in the abundance of fish stocks were the result of short-term fluctuations associated with fish breeding cycles rather than any long-term changes. Whilst recognizing that certain species were, in fact, much harder to catch than they had been in the past, many species still remained abundant and were easily caught.[21] Indeed, it would appear that certain species were characterized by high rates of reproduction and remain readily available despite intensive fishing pressures being applied. Selected species of Spotted Rabbitfish (*balowis samo*), Threadfin Emperor (*tatamiro*) and Long-nosed Wrasse (*paliganda*) are examples of fish that are an important component of their diet, and which have high rates of reproduction that make them extremely abundant at certain times of the year. These periodic large catches that reflect the highly variable nature of fishing support the view that there are still large numbers of fish to be caught. In contrast, those fishers who depend upon commercial fish species, which are intensively fished year round, and tend to be more slow growing, can clearly observe their decline.

Also important in understanding the perception of resource decline for subsistence-oriented Bajo was not whether particular resources have actually become more or less abundant, but whether they were still able to meet basic household needs. Since they have low levels of resource need, this has meant that the decline of some but not all fish species has by itself not undermined

their capacity to meet basic livelihood demands. Whilst many fishers recognized that resources had in fact declined, they remained optimistic that this would not impact upon their ability to meet livelihood needs. This view was reinforced by the fact that a decline has also been offset by changes in market prices for fish, which have seen a rapid increase; this may mask any realization of an actual decline.[22] Lots of people said to me they are catching less fish but are better off, thus deferring the impacts of resource decline as a significant issue. The Bajo over the past decade have also managed to fish along a commercial web moving from grouper, to turtles, to lobster, to octopus, and whilst each of these trades has suffered from decline, rising prices and new opportunities created by the emerging markets have deflected attention from resource decline because Bajo households continue to meet basic livelihood needs.

Finally, the Bajo have also successfully avoided issues of resource decline through doing what they have always done – moving on. In recent years the Bajo have gained access to motorized vessels, which enable them to access fishing sites that were not possible since adopting a settled existence. Whilst past nomadic practices have all but disappeared amongst the Bajo, there is still a strong culture of moving over large distances in search of marine produce that can help in compensating for any local decline. Hence, additionally, though fishers may recognize that fish resources have in fact declined, they also believe there will always be stocks available to enable their subsistence needs to be met, as long as they are prepared to search out new sites.

Fishing success

Comprehending prevailing attitudes towards the environment, and specifically issues of resource decline, may also be accounted for by exploring the ways the Bajo account for fishing success. Whilst not explicitly stated, it was apparent that the notion of short-term fishing success and what influences this carried had far greater significance for the Bajo than did the issue of long-term resource decline. Such a short-term outlook is consistent with the views of a subsistence culture, but may also reflect what it is the Bajo as individuals feel they can ultimately control and influence. Short-term fishing success can be enhanced and improved; long-term resource decline represents a complex social and political issue, which the Bajo feel powerless to address.[23] Upon closer examination, fishing success was something found to be determined by knowledge of the marine environment, the skill and efficiency with which they deployed specific fishing practices and an ability to move across the marine landscape in order to find new sites with abundant resources. The unpredictable nature of fishing characterized by high levels of variability was instead

accounted for by a Bajo spiritual understanding of the marine environment. Fishing success was something very much determined by their relations with sea spirits with whom they shared the sea, and which could be influenced by the actions of fishers and their families.

In accounting for fishing success the Bajo made frequent reference to the notion of *padalleang*, a form of good luck that the Bajo believed was critical to achieving fishing success. Padalleang was determined by fishers' relations to spirits known to inhabit the sea to whom they refer collectively to as the Mbo Madilau. According to the Bajo, spirits inhabit the coral, the waves, and the sea currents. Bajo fishers explained padalleang to me in a number of different ways:

> We cannot determine our catches and the number of fish we catch. The number of fish caught and where they are caught are determined by padalleang.
>
> No one can determine how many fish we catch, Mbo determine what people catch. Good luck comes from the Mbo who help us to catch lots of fish.
>
> Even if our nets are damaged, if we have Dalle we still catch a lot of fish. Dalle is more important than fishing equipment.
>
> I can use a large fishing line but a small fish can break it if I don't have Dalle, or I can have a small fishing line and big fish can be caught if I have Dalle.
>
> I am always aware of the sea spirits when fishing and respect them. That's why I get good catches. The sea spirits are more important [than other factors] because they have helped me many times.

Some said frequent movement to different fishing sites was so that they might 'find' padalleang, though it was said to be attached to individuals. Unsuccessful fishing at one particular site did not necessarily mean that site did not have fish there. The fact that different fishers could have different size catches but be fishing at the same site was seen as evidence in support of padalleang:

> Sometimes there are a lot of fish in the area but we can't catch any because of no padalleang. Some people may catch a lot of fish in the area if they have padalleang, but I must move to another area if I don't have any.

Padalleang was in large part dependent upon an individual's own actions and the respect shown for sea spirits whilst fishing. There is a long list of practices that the Bajo believe could affect padalleang (though they are variably believed by different people). The Bajo were not allowed to be emotional whilst fishing; they should not utter grievances they may hold or think bad thoughts to avoid

angering the Mbo Madilau. The lack of noise, including laughter and telling jokes whilst out fishing, was particularly important. People rarely talked whilst fishing, and when they did it was done in a quiet manner. The action of family members in the village is also important for determining fishing success. On numerous occasions Bajo fishers expressed their belief that when leaving on a fishing trip wives and children should not make a lot of noise or commotion. Sometimes it was claimed that a lack of fishing success was because of conflict that had taken place within the household while the father was away fishing. Similarly, a conflict between husband and wife might prevent further fishing success until such time as the conflict had subsided or been resolved. The Bajo use a concept they described as *merebu* to suggest a state of mind that would undermine fishing. The Bajo described merebu as feelings of worry or anger that impact upon fishing and the size of catches:

> If two fishers go fishing to the same place with the same equipment and if one is content and motivated whilst the other is upset and misguided, the second fisher will always catch much less than the first.

According to the Bajo, fishing could also be affected by events that took place within the village at the time of fishing that they were unaware of; this is referred to as *buel*. If someone falls ill or there has been an accident in the village and this information has not been conveyed to those fishing, then it is believed they will not catch fish or at best secure only a very small catch. Accidents that might take place in the household amongst children whilst the parents are out fishing appear to be of particular concern. One fishing family described an incident where a young child fell from the house onto the coral platform over which the house was built, badly injuring herself. Because of this incident the couple were unsuccessful that day in their fishing effort.

A lack of fishing success over a prolonged period suggests a more serious problem and may require the assistance of a *sandro* or village shaman who, through a special ceremony, can speak to the spirits and ask for forgiveness through presenting a gift. This non-elaborate ceremony involves placing tobacco wrapped in leaves on the sea while a shaman tries to communicate with the spirits. It is a short ceremony, over in a matter of just a few minutes, and involves only the shaman who presides over the occasion and the fishers. This is believed to improve fish catches and expresses respect for the spirits by giving them presents. These offerings are given if fishers have been unsuccessful for several days, are embarking on an extended fishing trip, or are going to a new site where they do not normally fish. On rare occasions this ceremony may need to be undertaken on repeated occasions before a fisher's luck turns and he makes a good catch.

Conflicts with environmentalism

Underlying differences between environmentalists and Bajo fishers are reflected not only in relation to the key issue of resource decline, but also in response to recent interventions in Wakatobi. The instigation of marine reserves, regulating destructive fishing practices and the exploitation of protected species, whilst regarded as important conservation measures, have also created deep divisions within local Bajo communities. Hardline approaches taken by environmentalists against such practices have served to galvanize community feeling against the marine park. These enforcement efforts have been largely counterproductive in failing to engage with prevailing social structures and cultural reference points. The Bajo tend to frame these interventions as outsiders seeking to control them, creating hardship for their livelihoods by limiting access to the marine environment that is intrinsic to their identity. These perceptions tend to rouse broad-level community support in opposition to environmentalists' efforts. Restrictions placed upon Bajo fishing contradict what the Bajo have for generations taken for granted, and so prompt solidarity around what they perceive to be traditional rights.

Approaches to date involve high degrees of outside intervention that fail to adequately recognize current community attitudes, and are at odds with the ways the communities think about their environment. Given the strongly embedded nature of knowledge already held by Bajo communities, awareness-raising programmes are considered unlikely to succeed. The establishment of rules and regulations that conflict with the Bajo lifestyle creates barriers towards attempts to work with communities. In the wake of confrontation and the resentment that has resulted, once funding for enforcement runs out and programmes stop, there is unlikely to be any real changes amongst the coastal communities affected. Today, a black market for Napoleon wrasse and green turtles continues despite the best efforts of environmentalists. Clams continue to be consumed widely within the community, although less readily available at local markets.

Whilst environmentalists have sought to highlight the impacts of destructive fishing upon coral reefs and depict those fishers who continue to use such practices as rogue elements within otherwise law-abiding communities, this view does not match the perspectives held by Bajo fishers themselves. In particular, it ignores the underlying social complexity that characterizes destructive fishing practices within Bajo society. Whilst destructive fishing practices, such as the use of cyanide and blast-fishing, are certainly on the decline, this has largely been the result of enforcement efforts by government agencies rather than of greater awareness amongst the Bajo themselves. While destructive

fishing practices were widely used in the past, some members of Bajo communities today still continue to employ them and, perhaps surprisingly, enjoy considerable support among those who do not. Many Bajo fishers did initially reject the use of these practices and spoke against them, but there remains a considerable degree of ambivalence and a high level of grass-roots support that remains largely obscured from the outsider.

Destructive fishing methods are almost always linked back to informal village leaders, who participate in wide social networks and are largely unintimidated by the efforts of environmentalists. Many villagers participate in destructive fishing either directly by obtaining cyanide from these leaders or passively through gleaning for fish killed by a blast event. Cyanide is often provided to fishers by middlemen who then sell the highly prized catches of grouper and lobster. This is not an exploitative relationship, but one based on mutual trust and good will that is of benefit to both parties. Social networks are implicated in these practices, so efforts outlawing them draw strong opposition to what are seen as hard-line approaches instigated by environmentalists. Blast-fishing provides an opportunity for many fishers to benefit from the physical and legal risks taken by destructive fishers, and this raises their profile. Following a blast, groups of fishers will gather and participate in the collection of fish. Where apprehensions have been made, this has not tended to stop these fishers, but has in fact made them more powerful within their communities and less intimidated by rangers. Hence, the imprisonment and attempts to halt destructive fishing have backfired, since destructive fishers are portrayed as heroes and the rangers as villains. Destructive fishing for the Bajo is about far more than the environmental consequences it renders, and environmentalists will need to recognize that preventing such activities is about more than apprehending a few rogue elements within these communities.

The Bajo are known to use and rely upon a variety of protected species. Clams are regarded as a delicacy by the Bajo, and whilst in the past clams were regularly sold at local markets and consumed by the Bajo themselves, regulation today has meant there has been a sharp decline in both trade and consumption of clams. Highly valued clam meat is often redistributed as a gift upon returning from outer reefs. Both Napoleon wrasse and green turtles are part of a lucrative live export trade from Wakatobi, but in recent years there has been a sharp fall in the market for these species. Napoleon wrasse is the most expensive of the live fish species sought by Bajo fishers and sold to traders as part of a larger live fish trade across the region that sells to large holding vessels from Singapore and Hong Kong. Groups of highly skilled Bajo fishers were also known to travel throughout Wakatobi and across eastern Indonesia in search of green turtles that were sold to middlemen for transportation to the island of

Bali, where they were used for sacrifice in traditional ceremonies and for saté in south Bali. The World Wide Fund for Nature in partnership with TNC has long sought to stop the turtle trade in Indonesia, and in recent years this programme appears to have been particularly effective in pressuring government enforcement, contributing towards the sharp decline in the turtle trade from Wakatobi. The Bajo fail to understand the restrictions on collecting certain species, particularly when they have a long history of dependency upon such resources. They reject the suggestion that giant clams or turtles are particularly rare as a reason for preventing their capture. The Bajo also resent attempts to prevent the harvest of turtles that they had come to rely on as an important income source, and have been particularly angered by the confiscation of captured turtles without any form of compensation. It is not surprising, therefore, that the Bajo hold on to a defiant attitude and continue to exploit such species through the black-market trade that remains well hidden from the intrusive eyes of park officials.

The specific case of the Bajo serves to highlight challenges that face environmentalists everywhere in their attempts to incorporate communities within modern conservation programmes. Conservationists have tended to emphasize science-based discourses of management supported by strict regulatory measures aimed at restricting fishing activity. These were not views widely shared by the Bajo; they questioned the notion that resources had, in fact, declined and rejected attempts to prevent access to fishing grounds and marine resources upon which they have long depended. Failure to understand the nature of Bajo environmental knowledge, a knowledge that is socially and culturally defined, which affects current patterns of resource use and behaviour and which differs substantially from science-based paradigms to which environmentalists adhere, serves to prevent meaningful community participation and leads to greater conflict. Communities clearly do not place value on the marine environment in a way that aligns easily with scientific concepts of biodiversity or endangered species protection.

Values associated with subsistence fishing to which the Bajo still widely adhere emphasize addressing the needs of the present. Whilst the Bajo do recognize that marine reserves can improve fish stocks, it is also clear that the *tabungan* or 'savings' value of these areas is not highly regarded. The notion of saving for the future is one that runs counter to a subsistence ethic, which is not apparently threatened by current levels of local environmental decline. It must also be remembered that the intensity of the need for protecting extant areas of high biodiversity is due to a global crisis that is not experienced locally. In fact, it has been pointed out by some authors that it is legitimate to resist protection strategies that impose penalties on communities that are not the primary

source of the problem (Li 2002). In this respect 'savings' for whose interest becomes the pivotal question.

Poor ecosystem knowledge is seen by environmentalists as the primary reason for resource-degrading behaviour.[24] The Bajo, on the other hand, believe themselves to be more knowledgeable than outside scientists. The belief that a well-coordinated combination of education and awareness-raising programmes, economic incentives and strict regulation can bring about profound changes in the way communities think about and behave in relation to the environment fails to recognize that the knowledge systems and relationships in which local practices are embedded are not easily given up. Nor can this local knowledge simply be replaced, without altering other important aspects of Bajo society, culture and relationship to the ecosystem.

An emerging social agenda for environmental conservation

In spite of deep-seated differences that are today seen to characterize Bajo fishing communities and environmentalists, larger changes affecting Bajo society also provide renewed hope that basic levels of environmental awareness are beginning to emerge. Whilst increased awareness of environmental issues so far remains limited to particular individuals and groups within the Bajo communities of Wakatobi, such changes do suggest the development of an environmental ethic from which opportunities may arise to encourage more meaningful collective action.

Such social changes have been facilitated by changes in lifestyle and livelihood that are known to have impacted upon Bajo communities more broadly throughout the region. Socioeconomic changes in recent decades have led to internal differentiation, in turn resulting in significant changes in attitude among some sections of Bajo society. Their incorporation within larger Indonesian society, driven by the commercialization of marine resources, has provided the Bajo with increased opportunities for the rapid accumulation of material wealth. Such opportunities peaked in the mid to late 1990s when marine commodities were first made available and resources remained abundant. Trade with local land-dwelling communities intensified, and today affluent commercially oriented fishers have houses and savings in addition to much higher levels of material aspiration.

In recent years, extreme pressure upon resources created by an ever-diminishing resource base and improved fishing technologies has begun to limit the incomes of these upwardly wealthy fishers. Ironically, therefore, it is those fishers who have gained most from resource exploitation in recent decades, and who it might also be argued are most responsible for excessive levels of

exploitation to date, who are the fishers who most readily recognize and lament resource decline. Furthermore, the now permanent and well-built houses in which they have invested reduce their willingness to migrate and seek urban employment in coastal towns and cities, further increasing their dependency upon local resources and forcing them to confront issues of resource decline.

Affluent fishers, therefore, are more willing to express objection to destructive fishing practices, and give credence to the value of environmentalists' efforts to protect marine resources, more than other members of the community. In seeking to account for declining fish stocks, fishers are increasingly identifying reasons that are seen to overlap with those being provided by environmentalists, that is, the use of destructive fishing practices, the growing numbers of fishers in the regions and improved fishing technologies, including the use of nylon nets.

Increased awareness of environmental resource decline has also resulted in relation to differing resource strategies used by different communities. On the island of Kaledupa, local farmers and Bajo fishers have worked alongside each other for over a decade, cultivating seaweed on the shallow intertidal marine flats that surround the island. In recent years such practices have intensified and now cover as much as 30% of the entire intertidal area that surrounds the island. Since the practice of seaweed cultivation was introduced to the area, an agreement has been reached between seaweed growers and fishers that no fishing activity is permitted within the seaweed beds in order to avoid accusations and presumptions of fishers stealing seaweed whilst undertaking fishing activities. Initially such a move led to high levels of resentment amongst Bajo fishers about being excluded from areas that they had in the past been able to readily access and, as such, felt that fishing opportunities were being limited. Today, however, improvements in catches by Bajo fishers in areas surrounding the seaweed beds have led to an increasing awareness amongst fishers that such areas may actually improve fish stocks and be beneficial for fishing. This is particularly so for net fishers who intensively fish shallow intertidal marine areas. Such an understanding is likely to be particularly beneficial in gaining community support of establishment of no-take areas. Additionally, seaweed growers have sought to discourage the use of blast-fishing and cyanide within the vicinity of the seaweed beds. A large seaweed die-off in the south of Kaledupa led to a group of seaweed farmers protesting against the actions of a fisher they suspected of using cyanide.

Off the coast, near the village of Sampela, a small marine reserve was instigated with the involvement of the community in 2000. The community was involved in all aspects of its establishment, including the selection of the site, the determination of its size, as well as in overseeing its implementation and

protection. Yet, despite widespread recognition by members of the community that fish stocks have greatly increased within the reserve area, many villagers are unwilling to acknowledge that any significant benefit might come from the initiative. Instead, many fishers believed the area should be opened and fishers allowed access so that the community could benefit from the reserve-generated stocks. Creating marine reserves without such a view towards their future exploitation was a concept that the Bajo could not understand and appeared unwilling to accept. The coral reefs were there for the Bajo, a resource upon which they had forever depended for survival. Preventing resource use, whether by restricting the take of particular species or through the creation of reserves from which the Bajo were denied access, ran counter to prevailing Bajo conceptions that resources were there for human exploitation and were not in decline. Many Bajo could not, therefore, accept the rationale for restricting their access to any part of the marine environment. They saw no point in protecting fish for some intrinsic value, and believed that the area should be opened up in the future. They saw even the new self-designed reserve area as an incursion upon their right to fish. This has created divisions within the community and some internal conflict. The notion that the area might produce long-term benefits through acting as a restocking source and through spillover effects was not a concept that many Bajo supported. What is of serious concern from this example is that a small and subsidized reserve area, implemented with as much community participation as one could reasonably wish to see, has struggled to receive community support and faced ongoing incursions. Years after its implementation, the community still remains divided and lacks consensual commitment to the concept. This experience does not bode well for Bajo recruitment to large-scale reserve strategies planned for Wakatobi.

Conclusion: rethinking the MPA agenda

Current Marine Protected Area approaches of environmentalists, despite promises of participation and highlighting the need for community involvement, remain far removed from the realities of the communities with which they seek to work. Through focusing upon science-based paradigms of resource management and perceived threats to marine biodiversity, environmentalists have failed to recognize important knowledge paradigms to which many coastal communities still adhere. The unique nature of environmental knowledge and understanding, such as that found within the Bajo communities of Wakatobi, is seen to conflict with the management ideals sought by MPAs, thereby preventing any attempt at meaningful collaboration and participation by environmentalists with communities. Whilst attempts to influence local

knowledge and understanding along lines sought by environmental programmes remain ongoing, such efforts fail to recognize the deeply embedded nature of local knowledge to which groups such as the Bajo adhere and the inherent difficulties of eliciting change.

Instead, it is argued, environmentalists will need to pay far greater attention to underlying social constraints relevant to issues of resource management. Whilst anthropologists have long recognized the diverse ways in which communities, and their different component groups, think about the environment, such understandings have so far remained largely absent from practical attempts to address impending environmental concerns. More than ever, there exists a need to acknowledge and address the inherent social complexities that inevitably underlie communities and that until now have been viewed largely as obstacles to resource management. Such opportunities will only be possible if there is a greater role for social scientists working alongside natural scientists. Environmental sustainability will only be achieved when social, as well as biological, limits to environmental management are fully understood and incorporated within modern development paradigms, and local knowledge paradigms valued equally with scientific knowledge. Attempts to adopt local knowledge and understanding within contemporary environmental programmes will inevitably require that environmentalists review existing frameworks of management, such as those currently being proposed by MPAs. Importantly, this includes looking beyond the established rhetoric of 'participation' that currently underlies environmental programmes, particularly those found within the marine sector, which continue to focus upon 'no-take areas' as the principal tool of resource management, in spite of what communities may feel towards such a concept. Ultimately, however, it will require that environmentalists will need to reconsider existing goals and expectations, in order that they more closely reflect the complex social realities of the communities with which they work. Expected outcomes, in terms of what levels of biodiversity are retained and how sustainability is to be defined, will need to be reassessed if communities play a central role in achieving environmental outcomes, as is suggested. Only then will deep-seated differences that currently characterize each side of the community–environment divide be meaningfully addressed in the future.

As this study has sought to highlight, points of access around which a new socially based agenda for environmental reform might be imagined may already be found amongst the fishing communities of Wakatobi. Recent changes to Bajo society have sought to facilitate a growing environmental ethic amongst individuals and groups that today provide renewed hope of community concern and action for the environment. Whilst such observations are unlikely to assure larger biodiversity goals, such as those currently sought by environmentalists,

they do offer hope that environmental knowledge and understanding long held by communities can, in fact, be altered through a process of self-reflection and socially acceptable facilitation. Such local level initiatives and understanding are therefore best seen not in terms of their immediate contribution to regional biodiversity or for achieving sustainable resource-management outcomes, but instead as representing critical starting points around which environmentalists can openly engage and work with communities. Furthermore, through reorienting scientific effort in order to better understand the ecological benefits of local-level initiatives, environmentalists can provide important legitimacy to such activities and the communities that seek to implement them. Finally, if successful, rather than acting as an alternative to formalized MPA management regimes, such activities could be integrated within larger management frameworks that are able to provide important institutional support to communities characterized by a growing sense of environmental awareness.

There is little doubt that MPAs, as currently framed, are not the quick fix many environmentalists today imagine and hope for. Seeking to engage communities only in so far as they are willing to conform to pre-established views on the environment remains fraught with danger. Imposing environmental programmes that ultimately conflict with ways of thinking and understanding held locally risks undermining environmentalists' relations with communities and the likelihood of future cooperation. It also presupposes that environmentalists can effectively regulate and control the actions of individual fishers. Whilst there remain considerable unknowns in our attempts to work with communities in achieving positive environmental outcomes, asking for participation on terms that are almost certainly unacceptable to local fishing communities and on premises that contradict the ways in which they understand the marine environment are doomed to fail. This is not to say that intervention is unnecessary. The Bajo are increasingly becoming integrated within a larger global system which is unquestionably unsustainable, and without change they will undoubtedly pay a high price, directly or indirectly, sooner or later.

Summary

Marine Protected Areas represent a highly contested arena within which environmentalists must work. Whilst representing priority sites for the protection of marine biodiversity, MPAs also often support large resident populations that have long occupied and exploited such areas. Importantly, such communities, like the Bajo of Wakatobi National Park, are characterized by strongly embedded local cultures that reflect a unique knowledge and understanding of the marine environment upon which they are known to

closely depend. Such knowledge is depicted here as providing significant barriers to modern MPA frameworks that have so far sought to emphasize scientifically sound and highly regulated regimes of resource management. Despite advocating for participatory approaches, it is suggested MPAs are unlikely to achieve their stated goals of environmental conservation in the face of an overriding 'knowledge divide' that currently characterizes environmentalists and the coastal communities with which they seek to work. Instead, it is argued, that if communities are to be successfully incorporated within contemporary conservation programmes, current approaches to MPA management will need to move beyond dominant knowledge paradigms of environmental theory and practice and instead recognize the often different ways in which communities, and their component groups, seek to understand the environment. Only then can environmentalists hope to discover appropriate management frameworks that not only recognize the environmental limits of marine environments where they seek to work but, perhaps more importantly, also consider the significant social limitations with which they are faced.

End notes

1. It is these potentially overlapping interests that provide both significant challenges as well as hope that Marine Protected Areas (MPAs) can be successful in the future. Coastal environments that conservationists seek to protect are often already the site of intense resource-exploitation activities, supporting the likelihood of impending conflict when specific resource-management strategies are introduced. Conversely, protection of biodiversity and achieving sustainable fishing practices for local communities are both seen to depend upon a healthy, intact marine ecosystem that should, at least in theory, enable both objectives to be met.
2. Perhaps the best example of an MPA is the Great Barrier Reef Marine Park off the coast of eastern Australia. The park covers an area of several kilometres and includes a complex zonation system comprising some eight different usage-zones that seek to restrict both recreational and commercial fishing, as well as other activities undertaken within the marine park.
3. In Indonesia, the partial decentralization of government has led to political tensions between central and district-level governments over protected areas. Whilst MPAs remain under the control of the central government, increased political power now being wielded by local governments has led to a questioning of conservation efforts in the face of increasing economic demands.
4. However, difficulties of this kind should not be seen as being restricted to less-developed countries. In Australia, recreational fishers sought to protest when large areas of a marine park were closed to all fishing activity due to scientific evidence supporting such a strategy.

5. Community-based management regimes, generally undertaken outside formally designated MPAs, have also been an important offshoot of marine conservation efforts that have been attempted across the region.
6. There is an established literature questioning underlying assumptions of communities, particularly in relation to environmental issues. See Li (1996); Brosius *et al.* (1998); Agrawal (1999); Mahanty and Russell (2002); Carlsson and Berkes (2005).
7. Whether environmentalists will be willing to incorporate such social complexity within mainstream conservation efforts remains unclear. As this chapter argues, however, such efforts are likely to be important to identifying critical 'middle ground' around which conservation outcomes with communities can be carefully negotiated, thereby addressing environmental concerns, whilst not conflicting with the needs and interests of local communities.
8. Eastern Indonesia is considered by many to be the most important region anywhere in the world for marine biodiversity. There are today many MPAs located east of the islands of Kalimantan and Bali. At least seven of these areas have been the subject of international conservation efforts in recent years.
9. Sulawesi, Nusa Tenggara Archipelago, Maluku Islands and West Papua form one of the most culturally heterogeneous regions in the world. High levels of localized ethnic diversity within the region are a reflection not only of the many unique ethnic groups associated with the large number of different islands and ethnic groups found in the region, but also a reflection of the high level of mobility attached to many of these groups, which has enabled them to resettle throughout the region, often living adjacent to indigenous populations. Perhaps the most mobile of these groups are the Bugis, Bajo and Butonese people, who have colonized islands throughout the region.
10. Throughout this chapter their programmes are referred to broadly as 'environmentalist'. Coremap is still in the planning stage, but has carried out site visits and extensive consultation. Coremap activities were planned to commence formally in Wakatobi in 2005.
11. In one operation alone 29 fishers were arrested, most of whom were convicted and handed prison sentences. Whilst such action is widely expected, it remains extremely difficult to know just how successful such action has been in reducing the incidence of destructive fishing.
12. There were, however, no prosecutions.
13. The Great Barrier Reef is perhaps the best example of marine reserves anywhere in the world, where approximately 30% of its area has been closed to all fishing activity.
14. There is considerable scientific evidence supporting the establishment of marine reserves. See Halpern (2003).
15. Scientific evidence suggests that a small number of very large individuals are likely to be more fecund, and hence more valuable, than a larger number of smaller individuals. Protecting these large individuals is an important role of marine reserves.
16. It has been suggested that marine reserves are likely

to be most effective when they cover approximately 20–40% of a fishing area (Roberts *et al*. 2001). As such, Coremap has set an ambitious target of placing 10% of each participating district's coral reefs within full protection of marine reserves by 2010, 20% by 2020 and 30% by 2030.

17. Coremap phase 2 draft implementation plan.
18. Poverty and common property are other explanations commonly provided.
19. They are, however, only 10% of the Wakatobi area's estimated population of 80 000, with land-dwelling, agriculture-based Butonese communities being the dominant ethnic group.
20. The Bajo recognize over 300 different species of fish that correlate almost exactly to scientifically recognized taxa.
21. In my discussions with Bajo fishers it was clear that only a very small number of species caught in the past could no longer be found. When asked to list those species that they believed had declined, fishers struggled to provide more than a short list of species.
22. The economic crisis of 1997 resulted in a significant increase in the cost of living for all Indonesians. However, because commercial fish prices also significantly increased, many Bajo were actually significantly better off following the crisis (and are to the present day) than they were prior to the crisis.
23. An analogous problem faces industrial societies in their so-far limited capacity to confront and respond to the already evident impacts of climate change.
24. Environmental programmes have also highlighted alternative income generation as an important strategy, believing communities to be suffering from impoverishment leading to the overexploitation of resources.

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18

Strategy and subjectivity in co-management of the Lore Lindu National Park (Central Sulawesi, Indonesia)

GREG ACCIAIOLI

Introduction

In the wake of failures to maintain protected areas based on strict exclusion – the 'fortress' approach deriving from the Yellowstone model – considerable efforts have been made to involve peoples living in and around such areas in various co-management schemes to invoke their own sense of interest in protecting the natural resources of such areas. However, park managers have increasingly felt that effective deployment of committed participation in local co-management institutions requires fostering a 'conservation awareness', a subjectivity of care for the environment. In his exploration of the imposition of a conservationist subjectivity by the Indian government on some of its citizenry, a process that, following Foucault, he labels 'environmentality', Agrawal (2005a, b) emphasizes the role of government regulations in fostering a modern subjectivity of care for the environment through the medium of participatory mechanisms such as forest councils. Others (e.g. Severin 1997) have disputed the efficacy of governmental regulations in effecting such a transformation of sensibility, arguing that traditional orientations to the environment enshrined in custom or the exercise of volunteer participation in non-governmental organization (NGO) projects of conservation result in more profound inculcation of custodial attitudes or conservationist

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sensibility. What this chapter seeks to explore is the formation of other types of cooperation around a protected area of Sulawesi, the Lore Lindu National Park (Taman Nasional Lore Lindu or TNLL), specifically the politics surrounding the formation of conservation agreements and village-level conservation organizations in the region. Through examining how elements of traditional customary (*adat*) management, modern NGO intervention, and the framework of governmentally mandated reserves and parks combine in realizations of park management, it also seeks in its conclusion to interrogate the theoretical nexus of Agrawal's model of the fostering of environmentality. Instead, it argues that overt 'care for the environment' may be largely a rationalization for making claims on the basis of indigenous status. Such a stance may be a vehicle for one specific party – indigenes – to seek dominance within the continuing operation of conflicting agendas among the parties involved in the project of conservation. Specifically, in the case of the Lore Lindu National Park, the idiom of conservation in the context of national park monitoring is used by the elders of the indigenous To Lindu to assert their jurisdiction over the land and resources of the Lindu plain and thus to control the members of other ethnic groups who have migrated to this area.

Indigeneity and national parks

Since the 1970s, as a result of a confluence of interests between the international lobby for better management of natural resources and the indigenous people's movement (Clad 1988:322), there has been greater recognition that national parks are unviable as isolated preserves if surrounded by degraded lands or by peoples who are hostile to its existence. Agencies such as the International Union for the Conservation of Nature and Natural Resources (now called The World Conservation Union, IUCN) have sought to incorporate in protected area guidelines consideration of the rights of indigenous peoples to continue occupying traditional lands. Managers of national parks have been urged in even more recent years to formulate agreements of co-management, involving indigenous peoples in the areas of the park in conservation arrangements and utilizing them as park protectors. To name but one instance, the Australian national park system has experienced some success in training and employing Aboriginal rangers in such contexts as the Kakadu National Park and the Gurig National Park, although some authors have decried the limitation of Aboriginal participation to the status of rangers without a more substantial role in park management (Foster 1997; Colchester 1994: *Salvaging* section 4, p.7).[1] In order to surmount the first problem of surrounding land degradation, park managers have fostered development projects and land-use plans, often based on

the notion of 'alternative livelihoods', for peoples living in areas surrounding such parks and reserves to enhance the quality of their lands and thus prevent, or at least minimize, destructive incursions of such peoples into the reserve land.

However, such efforts have been focused almost exclusively on cooperation with peoples deemed indigenous. As the IUCN 'Task Force on Traditional Lifestyles' defined such peoples: 'The ways of life (cultures) of indigenous people which have evolved locally and are based on sustainable use of local ecosystems; such lifestyles are often at subsistence levels of production and are seldom a part of the mainstream culture of their country, although they do contribute to its cultural wealth' (Clad 1988:322).

Those peoples who do not meet such criteria of indigeneity, even if living within or in the vicinity of national parks and reserves, have often been neglected in the formulation of cooperative management arrangements, as they have been viewed as pursuing lifestyles based on unsustainable extraction rather than sustainable use (for example, as rubber tappers, rattan gatherers, herders or even ranchers). Even among those organizations that urge working with indigenous peoples, there has been a divergence of opinion as to the limits of such cooperation. Some organizations, especially NGOs, have argued that regimens of 'sustainable use', as embodied in indigenous peoples' practices, constitute the best foundation for preservation of natural resources. Such advocates have urged the adoption of indigenous customary practices, reconceptualized as community-based resource management systems, as a sufficient basis for preserving environmental diversity. Others have argued that such practices, while certainly more anchored in notions of harmony with nature, cannot be considered a sufficient basis for conservation. They argue that past maintenance of ecological diversity may have had more to do with the presence of a limited population and small scale of exploitation and would prove unsustainable with population increases and contact with contemporary pressures to find sources of income for financing the material benefits of modernity. In this view there is no guarantee that indigenous peoples will always wish to retain traditional technologies, settlement patterns and small-scale subsistence strategies. This outlook has also exercised considerable influence on what has come to be a dominant paradigm of conservation, the 'biosphere reserve'.

Modelling the protected area in Indonesia: The Nature Conservancy and the biosphere reserve

A prominent proponent of the biosphere reserve concept, under its own term of 'ecoregion', is The Nature Conservancy (TNC), headquartered in Arlington, Virginia. As one of the most active players in the world of park

preservation, TNC operates the largest private system of nature sanctuaries in the world, owning over 1300 reserves in the USA alone. It has also entered into agreements with the governments of countries throughout the world, especially in the Global South, for the joint management of parks and reserves in the interest of protecting biodiversity. The Nature Conservancy has demonstrated its commitment to working with local partners, including indigenous peoples, in order to achieve this goal. However, it has rejected the notion of 'sustainable use' by local peoples as insufficient to ensure biodiversity conservation. While acknowledging the appropriateness of local participation, including formal agreements with indigenous communities within and around reserves, as well as fostering appropriate development for such communities as a capacity-building strategy, it has maintained the stance that some core areas of parks and reserves should not be subjected to human use. Its park management plans and evaluations thus depend upon a notion of zonation, with some park areas subject to human use, including the creation of enclaves, while others – core zones – are designated as out of bounds.

The Nature Conservancy's Parks in Peril (PiP) programme has become its flagship programme to implement such a strategy (Brandon *et al.* 1998). The largest single programme supporting parks in the Western hemisphere, it encompasses 60 parks in 18 countries throughout Latin and South America, covering over 30 million hectares. Based on the major premise that areas protected by policies of exclusion, what has come to be regarded as the Yellowstone model, cannot bear the complete burden for conserving biodiversity, PiP works on the basis of implementing four criterial strategies: (1) establish on-site protection; (2) integrate protected areas into the economic and cultural life of local communities; (3) create long-term funding mechanisms to sustain local management of these areas; and (4) use experiences of PiP site-based activities to influence conservation in other sites in the region's most imperilled ecosystems. The PiP programme retains the notion of protected areas excluding human uses, arguing that the use of any technique of forest product harvesting or cultivation, modern or traditional, imposed or indigenous, is scale dependent; even traditional techniques, if responding to modern pressures for large amounts of extracted products, may have large-scale impacts on a region's resources. In TNC's paradigm effective conservation of biodiversity requires managing a number of different environments requiring a combination, ever tenuous, of both participatory inclusion and enforced exclusion.

As one of its projects outside the Western hemisphere, TNC has been involved with the Department of Forestry in Indonesia in the management of the Lore Lindu National Park. Taman Nasional Lore Lindu (TNLL) was officially declared a national park in 1993 (Surat Keputusan Menteri Kehutanan

No. 593/Kpts-II/93 of 5 October 1993), 11 years after the Indonesian government declared it a candidate for this status as part of its initiative announced at the Congress of National Parks throughout the World, held in Bali in 1982 (Surat Keputusan Menteri Pertanian No. 736/Mentan/X/1982), and 16 years after having been declared a biosphere reserve by UNESCO (Sangaji *et al.* 2004:17). The Nature Conservancy's managerial role in cooperation with the Department of Forestry preceded the actual establishment of the separate management authority, Balai Taman Nasional Lore Lindu (BTNLL) in 1997. The Nature Conservancy's draft management plan acknowledges that it has had to carry out this task of co-management '…at a time of great change and upheaval in Indonesia[n] society. Gone are the rigid directives of central planning and in their place are the needs and aspirations of the Park's diverse stakeholders' (*Draft Management Plan* 2001).

Compared to earlier policies, the emphasis of TNC upon a collaborative management strategy with local communities, in the first instance the indigenous peoples in and around the park, has been a salutary advance. However, recent confrontations with other local peoples around the park have raised questions concerning the consensus necessary for sustaining a positive attitude to the park. The continuing harvesting of rattan and other forest products by spontaneous migrants, many of them Bugis from South Sulawesi, and the occupation of one area of parkland, specifically a 'core zone', called DongiDongi by resettlers in the Palolo Valley, who also claim rights as an 'original ethnic group' (*suku asli*) in the region, have added new dimensions to previous contestations of authority presented to the park managers. In response, local NGOs have shifted their grounds of support for such contestations, making the transition from a concern with the rights of 'indigenous peoples' (*masyarakat adat*, literally 'customary communities') to general concerns of rural poverty and agrarian social justice.

Transitions: new orientations, new conflicts

Throughout the 1990s NGO activism in Central Sulawesi was oriented to such issues as supporting, and often spearheading, the claims of 'indigenous societies' to land and other resources.[2] However, more recently, these NGOs have declared a change in orientation in reaction to such conditions as the continuing failure of the Indonesian economy to recover after the *krismon* following in the wake of the collapse of the Thai baht in 1997. As explained to me by the former secretary-general of the Alliance of Indigenous Peoples of Central Sulawesi (Aliansi Masyarakat Adat Sulawesi Tengah or AMASUTA), the provincial umbrella organization facilitating the campaigns of indigenous societies in Central

Sulawesi, the focus is now on the wider constituency of farmers in general rather than just 'customary societies'. In his view issues relating to land and environment were more general problems of the economy concerning the capacity of farmers as a whole rather than just the members of 'customary societies'. Poverty among farmers in general was the problem; gaining control of land was only one aspect of addressing this wider economic issue.

The wider scope of concern of such NGOs is revealed in such cases as the occupation of DongiDongi, on the northwestern boundary of TNLL. What distinguishes this controversy (Abbas *et al.* 2002) from previous ones regarding peoples like the Behoa Kakau of Katu (Sangaji 2002b) is the 'non-indigenous' status of these occupiers. They hail from four villages located to the southwest of the DongiDongi site of occupation in the Palolo upland plain along the northern boundary of TNLL. These are not long-settled villages; rather, they are largely inhabited by resettlers from various montane regions surrounding the Palu Valley, prominent among them TopoDa'a from Marawola subdistrict in the mountains to the west of Palu, but also To Winatu and To Pipikoro from Kulawi subdistrict. These peoples had been moved to Palolo as part of the programmes for the resettlement of the 'isolated peoples' (*Pemukiman Kembali Masyarakat Terasing* or PKMT) run by the Social Affairs Department (*Departemen Sosial* or Depsos) (Depagri 1992). This programme had begun in independent Indonesia in the 1950s, but had only intensified in the 1970s after the beginning of the New Order (Haba 1999). The 1970s and 1980s witnessed the efflorescence of this programme in Central Sulawesi, with the majority of the populations of these municipal villages (*desa*) in the Palolo upland valley being populated under the auspices of this programme.

Their relocation from their homelands by this programme has rendered problematic the classification of such resettlers as 'indigenous peoples' or 'customary communities'. Continuity with a specific geographic region was central to the definition of Indonesian indigenous peoples declared at a workshop of the Network for the Defence of Customary Societies (*Jaringan Pembelaan Hak-Hak Masyarakat Adat* or JapHama) in Tana Toraja in 1993: 'social groups that have ancestral origins (which have persisted for generations) in a specific geographical region, along with possessing a value system, ideology, economy, politics, culture, society and region [i.e. territory] of their own' (KMAN 1999).

Certainly, the land these resettlers occupied in DongiDongi could not be represented as their long-held customary land, denying them the basis claimed by other groups for continuing control of land in and around TNLL (Sangaji 2002a). They have thus justified their occupation on other grounds. Although DongiDongi is now part of TNLL, it was formerly part of the logging concession

of PT Kebun Sari, a joint venture with a Japanese logging firm, and is primarily covered by secondary forest; the land's status as secondary forest they use to dispute the importance of the region as a core zone within TNLL. In addition, many members of the resettlement communities from which the DongiDongi occupiers hail once worked for this company in order to gain an income to support themselves. This latter fact leads to their other argument for occupation: the failure of the Social Affairs Department to have delivered on its promises for the resettlement communities. The resettlers claim that they have not been accorded the 2 hectares of agricultural land promised for each family head by Depsos, and their claims have been supported by such NGOs as WALHI Sulteng and YTM. According to a survey conducted by these NGOs, the resettlers had only received between 0.5 and 0.8 hectares of land per family under the terms of resettlement; in fact 80 of 177 farmers surveyed in Rahmat were altogether landless, with other information suggesting up to 200 families are without land in this village (Sangaji 2002a:15). In addition, other forested land that they had used for gathering rattan and hunting, given their inability to subsist on the land actually allotted to them under the PKMT programme, was subsequently declared part of TNLL, eliminating those sources of subsistence and income that had allowed them to survive despite this inadequate agricultural land allocation. Many of those who had previously worked for PT Kebun Sari had entered the concession land after the company vacated it in order to plant coffee and cacao; some had actually opened gardens while working for the Japanese logging company. For them, such opening of land gave them ownership, by the terms of the right of first clearing recognized widely in the customary land tenure systems of the societies of highland western Central Sulawesi (e.g. for the To Kulawi of Mataue, as documented by Sangaji *et al*. 2004, p.60). Even for those willing to forsake these gardens, the replacement land they had been promised by the government as TNLL took over this land had never materialized.

WALHI Sulteng and YTM have also been instrumental in facilitating the formation and activities of the Free Farmers' Forum (*Forum Petani Merdeka* or FPM) to fight for their claims on the DongiDongi area, including a demonstration at the governor's complex on 19 June 2001. As the forum's name suggests, their support is no longer based on claims of the rights of 'customary societies' to their indigenous land, but on the economic implications for poor farmers of government development programmes, such as the resettlement scheme and the granting of concessions to outside firms. The FPM's demand that DongiDongi be granted enclave status to parallel those accorded such 'customary societies' as the To Lindu and To Katu thus rest on very different grounds than these earlier contestations. In interviews I conducted in June of 2002, both the

park director and TNC officials in Palu voiced their continuing opposition to any granting of enclave status. They denied any 'true' settlement had been established in the DongiDongi area and noted the unregulated cutting down of the forest by the occupiers, including involvement by Bugis chain-saw operators who had followed in the wake of the original Da'a and Pipikoro settlers. The occupiers themselves had, however, sought to bolster the legitimacy of their claim to have established a true settlement by bestowing on their site of occupation the traditional name *Ngata Katupua* (Settlement of Hope or *Tanah Harapan*). The continuing opposition of the park management and its partner TNC has prompted the director of one opposing NGO to label these resource management organizations as engaged in a programme of 'ecofascism' (Sangaji 2002a:16).

In the wake of past controversies and the continuing stalemate of the DongiDongi controversy, local NGO advocates have called into question the very concept of conservation they regard as the basis of such institutions as national parks. In fact, national parks and similar preserves are seen as conforming to the same mould as the New Order development projects that stripped customary societies of their land and rights. What they see as real conservation is the indigenous land-use systems that have maintained a balance with sylvan environments throughout the centuries preceding government impositions (Sangaji 2002a:14, 2002b:16), including transmigration and the granting of concessions for logging, plantations and other enterprises. The director of the Central Sulawesi WALHI office declared that national parks, such as TNLL, were historically from the West and did not fit a process of historical growth that was quite different in countries like Indonesia. With the New Order's history of granting logging concessions to its cronies in national parks and reserves throughout Indonesia, in his view it was simply unjust to consider the cutting down of trees by people like the DongiDongi occupants as illegal. Such scapegoating was just another instance of blaming local societies instead of prosecuting firms supplying Palu's 124 sawmills with logs from throughout the surrounding forests, many of them illegally obtained. To advocates from NGOs such as WALHI Sulteng and YTM, controversies like DongiDongi are not issues of conservation, but of agrarian social justice, an unjust blaming of only 'small people' for crimes like deforestation. They assert that authority to monitor resource use must be given to local societies, whose systems of forest use have never been justly valued, despite centuries of sustainable use before the onslaught of development projects. For such advocates human occupation and preservation of environment are not incompatible, as long as that occupation is based upon traditional modes of land management, even when practised by people no longer living in their homelands.

New forms of co-management: conservation agreements as a response

The Nature Conservancy still views sustainable use along customary lines as insufficient to carry through the project of sustaining biodiversity, but it has responded with its own innovations to increase the commitment of surrounding stakeholders to the conservation regulations of TNLL. New forms of co-management agreements with local society members have constituted one such response, as TNC has sought to encompass a greater range of inhabitants than just the 'indigenous peoples' who had been the target of earlier conservation agreements transacted around TNLL. Brokered by organizations as diverse as the Palu-based indigenous rights NGO YTM, the international relief and development organization CARE, as assisted by its local sister organization Yayasan Yambata, and the Asian Development Bank-funded Central Sulawesi Integrated Area Development and Conservation Project (CSIADCP), these earlier agreements had focused almost exclusively on the 'indigenous peoples' (*masyarakat adat*, literally 'customary communities') around TNLL (Mappatoba & Birner 2004; Sangaji 2002b). In most all these agreements, the local customary councils (*Lembaga [H]Adat*) had been the key players on the village side to whom these organizations looked for the implementation of the terms of these agreements, including the imposition of sanctions for transgressions. Such agreements thus presumed a relative homogeneity of the contracting community and the continuing authority of the customary council as adjudicator of transgressions. Yet, such a presumption is precisely what has been called into question by such contestations of park authority as the issue of DongiDongi, where settlers in the area have been those most active in transgressing park regulations.

The Nature Conservancy has taken a different tack in drawing up its conservation agreements in the vicinity of TNLL (Mappatoba & Birner 2004:28). By 2004 TNC had managed to initiate fourteen conservation agreements, with five of them completed and approved by the TNLL management office (Mappatoba & Birner 2004:18). These first agreements were transacted in Lore Utara on the eastern side of the park. As they have already been reviewed (Khaeruddin 2002), I concentrate here on the more recent (March 2005) agreement entered into with the four villages of the Lindu enclave within TNLL (Desa Puroo, Langko, Tomado dan Anca 2005). While working with both customary functionaries and administrative village officials, TNC has sought to form new village organizations to deal with the issue of local-level monitoring and enforcement of conservation regulations, especially encroachment of gardens for coffee, cacao and other cash crops within the park and harvesting of both timber and non-timber

forest products. The Nature Conservancy has moved away from a position of exchanging provision of drinking water, marketing assistance for organically grown coffee, and other development services and infrastructure in return for communities' commitment to observing conservation rules – the previous orientation of agreements brokered by CARE. Recently, following its interpretation of Forest Act No. 41/1999 on community participation in forestry, TNC has linked community commitment to conservation with park management recognition of customary rights, including the right to access products from customary land (*tanah adat*) now claimed as part of the national park. Hence, it has moved closer to the position demanded by YTM and other critics of its policies with regard to the communities of the enclaves and perimeter of TNLL.

The 2005 'conservation agreement with the society of the Lindu plain', while similar in basic format to earlier CSIADCP contracts, reveals a sophistication and range that far transcends such earlier agreements. Its section of basic considerations (*Menimbang*) succinctly sets forth the basic principles of biodiversity conservation, asserting the interdependence of all living beings (*makhluk hidup*) on earth, positioning humanity as only one link in the great chain of life. Biodiversity conservation is phrased as a prerequisite for sustaining livelihoods: 'On the basis of such thinking, it is clear that conservation efforts to preserve the sustainability of life for particular living beings constitutes indirectly an effort to preserve the continuing life of humankind' (*Kesepakatan Konservasi Masyarakat Dataran Lindu Kecamatan Kulawi Kabupaten Donggala* [hereafter *Kesepakatan Lindu*], unpublished). While asserting the necessity of national parks as a measure to combat the increasing rate of extinctions in the chain of life, it admits that the placing of park boundaries was a unilateral action taken without consultation, resulting not only in losses to the interests of local inhabitants, but also the failure of conservation programmes as a consequence. It recognizes the prior existence of 'customary land / communal use / and living space for the societies of the area who have resided there continuously, long before the existence of the national park' (*Kesepakatan Lindu*, unpublished). The agreement thus signals respect for these interests, but also the need to balance them with the preservation of biodiversity for the sake of the sustainability of all life as a whole in a way that is acceptable to all parties to the agreement. Balancing respect for the rights of the societies in the vicinity of the park with the control and management of natural resources is proclaimed as the fundamental purpose underlying the conservation agreement. The two following sections of the agreement quote a much wider range of laws and regulations related not only to conservation, but also basic human rights and agrarian issues, than other conservation agreements.

The ensuing chapters of the agreement – space precludes the listing of their contents in detail – seek a balance between the acknowledgement of customary institutions, such as the Adat Council of the Entire Lindu Plain and the individual customary councils of the plain's four villages, and the assertion of the authority of the national park institutions. The document proclaims its commitment to a 'participatory management planning' process, but also insists on the park framework of zonation, though opening up the possibility of subsequent determination of boundaries of zones on a participatory basis, balancing both ecological and social considerations. Besides these basic principles and general stipulations, specific paragraphs set limitations within park land on felling trees (allowed for local house decorations, customary rituals, etc.), harvesting rattan, hunting, gathering dammar and taking other natural resources – bamboo, *enau* sap for palm toddy and sugar, roots and herbs for traditional medicines, stones and sand, honey, and others – as well as opening up land for gardens, grazing livestock and dealing with water courses. The possibility for further development of these stipulations in accord with the basic principles is also signalled.

However, what is perhaps most important in this regard is the specification of institutions for carrying out this agreement. In its early sections the conservation agreement made no differentiation between the *adat* councils of Anca, Langko and Tomado, villages all dominated by indigenous To Lindu, and the *adat* council of Puroo, which is exclusively made up of settlers from elsewhere in Kulawi subdistrict. In contrast to the approaches of YTM, Yaphama, and CSIADCP, which focused only on the indigenous groups (*masyarakat adat*) of the area, the TNC agreement is meant to encompass settlers as well, as is made clear in the specification of the 'village conservation organizations' (*lembaga konservasi desa* or LKD), 'the institutions that represent society in conservation efforts in TNLL at the village level'. The LKDs are intended to:

a provide an umbrella for communication between the society and the park management of the Lore Lindu National Park;
b socialize the conservation agreement of the society of the Lindu Plain to the society;
c Carry out participatory planning with the park management of the Lore Lindu National Park;
d supervise the carrying out of the conservation agreement;
e evaluate the carrying out of the conservation agreement;
f report on the results of the evaluation of the conservation agreement to the village headman.

Membership in the LKD is determined 'on the basis of the decision of the village head in accordance with the results of village consultations that have been

attended by the Park Management of Lore Lindu National Park, the Village Government, the Village Representative Body, the Adat Council and other members of the society' (*Kesepakatan Lindu*, unpublished), with members serving for three years. Responsibility for adjudicating transgressions, as well as administering punishments along traditional lines, and resolving disputes among village members related to the conservation agreement, is allocated to the *adat* councils of the plain. However, cases are to be tried in the presence of the LKD, village representative body (BPD), other members of the village government apparatus and park management staff. The final paragraph restates the agreement's aim to 'obtain acknowledgement of its [the local society's] management of natural resources in the customary territory that is located within the region of the Lore Lindu National Park', thus reiterating its own recognition of the notion of Lindu customary territory, which is not displaced by the imposition of national park status and which retains implications for the terms of management.

Institutionalizing (and undermining?) the village conservation organizations

The encompassment of all the ethnic groups within the Lindu plain in regard to conservation enforcement is a notable aspect of the Lindu conservation agreement, though it still relies on the customary mechanisms of the dominant 'indigenous society' (the To Lindu, strictly speaking)[3] in the adjudication of transgressions. It is thus both located *beyond* and *within* the customary framework. Certain contradictions ensue from this double positioning. These contradictions are most evident in the operation of the village conservation organizations in their monitoring and enforcing compliance with the conservation regulations of the park, but with an eye to the upholding of customary regulations as well. In theory, the membership of the LKD is open to members of all ethnic groups in the plain. The membership from Puroo is composed of Kulawi settlers, while the Kanawu LKD includes representatives from all the migrants settled in subhamlets located on the eastern side of the lake away from the municipal village centre – spontaneous Bugis migrants from South Sulawesi, Pipikoro resettlers (local transmigrants) from the mountainous regions of southern Kulawi, as well as more recently arrived Toraja farmers from the northern highlands of South Sulawesi. Yet, the largest proportion of the LKD is made up of indigenous Lindu members, many of them also members of the *adat* councils of the Lindu plain, whose own composition is exclusively made up of indigenous local aristocrats (*maradika*). Their double role sets up a tension of representation. These *adat* elders promote the LKD as an organization

to uphold conservation regulations for the whole Lindu enclave, as prescribed by park directives, but they also use it as an instrument to declare the To Lindu's precedential rights to land and resources according to indigenous notions of ancestral territory.

Such claims have been evident in the activities of the LKD to date. The Lindu village conservation organizations were actually functioning before the formal signing of the Lindu conservation agreement on 30 March 2005. Indeed, their first activity as a group took place in early 2004, when they were taken by TNC staff to visit the areas of the Palolo plain devastated by the December 2003 floods, which TNC claimed were a result of the widespread felling of trees by the occupiers in the DongiDongi region.[4] Armed with this evidence of the environmental consequences of the neglect of conservation regulations – in this case, the occupation of a core zone, so designated in part because of its watershed functions – representatives of the LKD of three of the Lindu villages journeyed with a TNC representative, a forestry policeman (PPA/Polhut) and the Tomado village secretary to Kanawu. Numerous encroachments into park land had been noted, as gardens had been opened on the slopes of Mt Nokilalaki beyond the boundaries of the Lindu enclave by not only the most recent Toraja settlers, but also by some of the longer-term Pipikoro residents and others. The team's activities commenced on the evening of 17 May 2004. At a meeting with selected representatives of Kanawu, team members enunciated the motivations of the stay and planned the survey of the regions of encroachment in park land the next day. After undertaking this survey of the most remote subhamlets and several of the gardens outside the enclave, the team convened a public meeting on the evening of that second day, in which the purpose and results of the day's survey were announced and the possibility of actions against those whose gardens encroached on national parkland were discussed.

The framing of the need to deal with such transgressions revealed overtly a converging of interests and a moulding of a unified constituency, but covertly a continuing claim to precedential land and resource rights by the indigenous To Lindu LKD members who also represented the *adat* councils of the plain. The Nature Conservancy facilitator began the first night's meeting by emphasizing the need to ensure the sustainability of the natural resources of the Lindu plain, and the role of the LKD in their management, a theme he also emphasized in his encounters with transgressing farmers during the survey and with the assembled hamlet members on the second night. At that second meeting he constantly endeavoured to maintain focus on the development potential of the area, as well as the need to assure a constant water supply, crucially dependent upon the preservation of the surrounding forest, to realize this

potential. In this enunciation he was constantly supported by the government representative, the Tomado village secretary:

> Firstly, what makes up our aim is nothing other than how we can manage well this region of protected forest that we have in our territory…it is our hope from the [village] government that we can all do the good thing for continuing to keep watch over the region that we inhabit together, so that it continues to be preserved. Let us manage it, keep watch over it, let us carry out our activities, both in our gardens and our wet rice fields in ways that are environmentally friendly [*ramah lingkungan*]…'

The policing function of the LKD within the overall management strategy was reinforced by several speakers, often in the context of preserving the environment for the sake of future generations.

However, the head of the LKD from Langko, whose prominent role in the *adat* council of that village was also referred to when he was invited to speak, also revealed the play of another agenda. While eloquently discoursing upon how the devastation in DongiDongi exemplified the fate of those who opposed government regulations,[5] he also used this example to argue strongly that Kanawu should not be formalized as a separate administrative village (*desa*) – long a project of the Bugis settlers there, with considerable support from some Pipikoro local transmigrants, wishing to get out from under the authority of the *adat* council in Tomado. Instead, Kanawu should be kept within the fold of Tomado administrative village so as to more effectively guard against illegal migrants, some of them doubtlessly fleeing the environmental ruination in Palolo to Kanawu, Lindu's most vulnerable illegal entry point: 'Let this not be like a roll of string that has unravelled and cannot be wound back [into a unified roll]'. In making this appeal, he was quick to label all those present as Lindu people, 'because we are all, because Lindu, we all possess Lindu, not just the [indigenous] Lindu people, but all people at Lindu, we possess this all, because we have all lived here…' However, his agenda of maintaining the dominant position of the indigenous To Lindu in the conservation endeavour was soon even more apparent, despite the appeal to the unity of all inhabitants of the Lindu plain.

Near the meeting's end, the TNC facilitator attempted to emphasize the 'synergy' of park management and customary interests:

> That's my opinion, thus for the future, if nothing else, for our conservation agreement, if nothing else, we have to unify the conservation of customary forest with the conservation of the Lore

> Lindu National Park forest. That's what we have to bring together. That's the most important thing. I think that here, between the national park and customary territory, there's a single unity that we have to preserve, together. There's no difference here, because the customary territory that we have to watch over, that's also the territory of the national park that we have to watch over. In order to watch over the activities of the peoples who are in the village. That's all.

Later, he also spoke of the need to align the indigenous Lindu customary 'zoning' according to *suaka* with the national park zonation scheme. While overtly agreeing with such assertions, the LKD *adat* elder from Langko also expanded this theme in a direction that emphasized the prior rights of the indigenous To Lindu to this territory:

> So, my thoughts concerning the customs of my ancestors, this is all *adat* lands. If I speak, I have ancestors who lived here in this Olu, for Olu is its name, not Kanawu or anything else, but Olu. So, if I recite the names of all these settlements, I know them all proceeding to Kangkuro, Salumpalili, Tumawu, Tawaiki, Salu Suo, Banbaria, Boya, Lewonu, Sangali, Tae Lampanga, Tae Ropo. I know them all, because of what? Because my ancestors from time immemorial have lived here, my ancestors from time immemorial have sacrificed to extinction their livestock, because of this plain. But now the regulations are different. Gentlemen, my brothers and sisters who have come here, now we no longer think of only ourselves, we think of all of you, Bugis fathers, Toraja fathers, Kantewu fathers, we speak of all of you as Lindu people. And now once we speak of Lindu people in general, then how should we orient our thoughts to preserving this environment, how do we orient our thoughts so that we are all the same, all of us have approximately the same land, so that none of us inhabitants has too much land, that is my proposal…

In this passage, within the general framework of a purported unity of all inhabitants of the plain, the To Lindu elder adroitly asserted his prior rights to the land as an indigenous To Lindu, since his ancestors had sacrificed the blood of their livestock upon it (all in an indigenous conservation effort to prevent the effects of overgrazing, as he later noted). Only he could still recite the real, the original, names of all the customary territories on the eastern side of the lake, thus warranting his custodial right of precedence. He then used an assertion of the equality of all Lindu inhabitants to support the demand of the customary

council of the Lindu plain that no Lindu inhabitant may cultivate more than two hectares of land, a measure aimed squarely at the Bugis and Kulawi settlers, some of whom had opened up to 12 hectares, including all their plots devoted to coffee, cacao and other crops (Acciaioli 2001). So, even in his assertion of contemporary equality, as innocently proclaimed earlier by the TNC facilitator, this wily Lindu elder was able to advance the project of insuring the customary control of land by the indigenous Lindu *adat* council. By further linking erosion as a punishment from God with the careless extension of plots beyond what the *adat* council stipulated, he managed as well to supply ultimate religious undergirding to the wisdom of the indigenous customary council and its members' noble ancestors: 'Thus, those people of former times may not have gone to school, but they understood, and they had been given indications by the Lord, so that they acted in a way to preserve Lindu.'

In his comments to individual transgressing farmers during the survey, this To Lindu elder made ready use of idioms of the New Order government, in particular the rhetoric of the Department of Social Affairs (*Departemen Sosial* or Depsos). The farmers of the remote subhamlet Sangali, dispersed in their field huts scattered throughout the forest at the eastern edge of Kanawu hamlet, were 'wild farmers' (*petani liar*) or 'nomadic swidden farmers' (*peladang berpindah-pindah*), opening up land in one spot, then bestowing it upon an incoming relative (issues of illegal entry again!), and moving on up the mountain to open up other plots deeper in the forest, specifically the forest of the national park. He exhorted them to become like the other farmers of Kanawu, who neatly arranged their plots concentrated next to each other in a wide expanse, where one could see one's neighbours for two kilometres or more:

> Because here in Kanawu, I say that the Bugis, the Kantewu [i.e. Pipikoro] people, all these people are visible, even as far as two kilometres one can see humanity, ah! This is what we want, living together!

The continuity of such rhetoric is perhaps understandable, for the Lindu people themselves had formerly been assimilated to the status of *suku/masyarakat terasing* ('most isolated societies/tribes') targeted by the Department of Social Affairs during the New Order, since the Lindu plain was only accessible by horse trail and located far from medical and other 'civilized' facilities. However, this elder's assertion of the need to render the Sangali populace 'visible', as a densely settled whole, referred not to state projects of rendering a subject population visible (Scott 1998), but to the continuing need for surveillance by not just the LKD as agents of conservation interests, but by the Lindu *adat* councils as the primary custodians of the Lindu environment, their dominance

warranted by precedence of settlement and their conception of immemorial custom.

The connection of such assertions to the To Lindu agenda seeking to use the LKD to further their own ethnic group's interests became even more apparent at a meeting sponsored by AMASUTA in the village of Langko some three months later to discuss the problems faced by indigenous people in the Lindu plain. At that meeting many of the same players who had delivered speeches in the capacity of representing the LKD in Kanawu spoke instead in their capacity as To Lindu elders. Most emphasized the necessity for the To Lindu *adat* council, as the official representative body of the 'indigenous people' (*masyarakat adat*) of the plain, to retain the control of such activities as the management of fishing in the lake by all fishermen, whether To Lindu, Bugis or from another ethnic group. The ultimate authority of the *adat* council for management of resource issues in and around the Lindu plain was not questioned. The need to bring all inhabitants into line with the *adat* stipulation of limiting each person's land to two hectares was reiterated. In fact, the very Lindu elder who had spoken as the head of the Langko LKD in Kanawu emphasized how the national park had appropriated customary land in its allotment of land to the park, and wondered out loud whether such land was not better managed by traditional means rather than through institutions of the national park. Indeed, as one participant opined, perhaps the best solution to problems encountered with the TNLL management office was simply to claim back all the park land so it reverted to its customary owners. Even the head of the Langko *adat* council agreed to the possibility of claiming such land back if it was necessary for the council's continued functioning. He considered that the LKD was too limited by the restrictions imposed by the park management office, and the To Lindu customary council might be freer to act with determination in preserving the local environment without it. Hence, when placed in the context of discussing the empowerment of their own indigenous institutions, the commitment that Lindu elders had shown for TNC-organized village conservation organizations was largely absent, revealing a different locus of continuing indigenous loyalty.

Conclusion: environmentality reconsidered

The DongiDongi case on the northeastern boundary of the Lore Lindu National Park highlights many of the ambiguities regarding the treatment of peoples living in and around national parks. Initially, the conservation agreements signed by park officials and representatives of villagers living along the park's boundaries were targeted at indigenous peoples living there, such as those negotiated by YTM, Yambata, and CSIADCP, not to mention the early

agreements of TNC with To Pekurehua communities of Lore Utara (Khaeruddin 2002). Non-indigenous local peoples have proved to be a different story. It is no accident that the To Rampi migrants from South Sulawesi resident in Dodolo village, which had been encompassed within the park, ended up being resettled, while the To Katu, with a much stronger claim to indigeneity as an offshoot of the local To Besoa, resisted such efforts and were eventually granted enclave status under the auspices of a conservation agreement (Sangaji *et al.* 2004). The resettlers of DongiDongi, originally from the upland regions of Marawola and southern Kulawi (now Pipikoro), but for many years resident in the Palolo Valley, have perhaps even less claim to indigenous status than the inhabitants of Dodolo. Yet, they have won the support of NGOs that had earlier oriented themselves more exclusively to the rights of the indigenous peoples in the region. The failure of the DongiDongi occupants to win an enclave status from the park authorities has motivated their strongest NGO supporters, WALHI Sulteng and YTM, to question the entire enterprise of establishing national parks as a colonial imposition, echoing the critique of Western models of conservation as continuing colonialism that have been voiced elsewhere (Stevens 1997:24). They have called for a moratorium on TNLL and by extension national parks in Indonesia more generally. The director of YTM has called for the revocation of the status of TNLL as a protected area so that the traditional claims of both the 'authentic societies' (i.e. indigenous peoples) *and* the other communities that have inhabited the area covered by the park and its periphery since before its imposition can be duly acknowledged. Only after such official acknowledgement does he suggest a round-table discussion involving all stakeholders focused upon an appropriate policy of area management that would be community based.

Clearly, such a contestation does not represent simply another case of indigenous interests needing to be accommodated by appropriate agreements stressing participatory management of the national park. It represents instead a clash of two conflicting ideologies of conservation. On the one hand, TNC and its government partners have certainly foregrounded consultation and negotiations over appropriate management with indigenous (and, more recently, other local) stakeholders; however, they remain committed to a biosphere model of biodiversity conservation that demands some areas – core zones – be protected from human use and habitation. On the other hand, such local NGOs as WALHI Sulteng and YTM are committed to a model of 'sustainable use', arguing for the adequacy of local community-based resource management for all conservation purposes. In their view the imposition of protected areas is a miscarriage of agrarian social justice, reproducing the poverty of local farmers, whatever their origin. Despite a laudable history of park managers

accommodating indigenous interests through such strategies as conservation agreements and declaration of enclave areas, the present impasse precipitated by the occupation of DongiDongi by resettlers presents a different sort of contestation of park authority, one whose implications undermine the very basis of conservation ideology's incipient alliance with indigenous interests that has so far preserved the park. As one of the WALHI Sulteng advocates declared in an interview, 'There is no meeting point.'

Yet, TNC has more recently attempted to provide such a 'meeting point'. The conservation agreement it has negotiated for the Lindu plain does continue to privilege indigenous interests in the allocation of sanctioning transgressions to indigenous *adat* councils. Yet, it also attempts to accommodate the interests of non-indigenous settlers through the formation of village conservation organizations (LKD) whose recruitment includes all the peoples settled in a park-related region. Certainly, the LKD have catalyzed the cooperation of Bugis, Pipikoro and Kulawi settlers with indigenous Lindu representatives. But the indigenous representatives are caught in a position of conflicting loyalties, both accepting the wider ambit of participation in the conservation project and the acknowledgement of settler rights it implies, but also manoeuvring to advance the agenda of preference for indigenous rights in the warrants they invoke to justify their position in the multiethnic project of conservation.

The use of the village conservation organizations by the indigenous Lindu members to advance their agenda of reasserting control over all the migrant ethnic groups in the Lindu plain presents a challenge to the theory of environmentality posited by Arun Agrawal (2005a,b). In that theory Agrawal emphasizes how local participation by Kumaon villagers in the village forest councils imposed by the Indian state leads to a new subjectivity, an emergent orientation of concern for the environment. Practice, the theoretical term in his model by which he labels various sorts of participation in forest councils and monitoring of forests to ensure compliance with council-endorsed regulations, is the crucial factor that leads to change in belief. Social action precedes subjectivity: local villagers may feel at first compelled to participate in state-mandated councils, but eventually through participation in this medium of 'intimate government' (Agrawal 2005b:195) they come to espouse the cause underlying this governmental regulatory strategy of council creation: concern for conservation of the forest. This process of forming a new subjectivity in line with government aims through regulated participation Agrawal labels 'environmentality'. The very form of the term reveals its debt to Foucault's notion of governmentality, as Agrawal (2005b:216) readily acknowledges. Environmentality is that form of governmentality that focuses upon the creation of concern for the environment. Forest councils can be seen as both a 'technology

of power' and a 'technology of self' in the Foucauldian sense, for they not only are imposed institutionally upon villagers but they also operate to induce a change in subjectivity. For Agrawal the practice of participation, or lack thereof, is a far more potent factor than any categorical ascriptions of local villagers – gender, caste, etc. – in accounting for their (transformed) subjectivity.

However, Agrawal's invocation of such a theoretical dynamic implicates him in the very shortcomings that plague the Foucauldian framework. The formation of individuals' subjectivity is seen as a process of the internalization of orientations and constraints of a disciplinary regime imposed from above. Despite Agrawal's invocation of the term practice, and some allusions to Bourdieu to bolster it, his basically Foucauldian model leaves little room for the exercise of agency from below that characterizes a more fully developed practice theory. The state is the ultimate manipulator of subjectivity and achieves its aim of fostering environmental concern through the medium of intimate government, specifically the imposition of forest councils whose aims villagers come eventually to endorse through their subjectivity-moulding participation. But this model de-emphasizes how villagers may choose the terms of their participation in councils on the basis of diverse motivations. Enunciated concern for the environment may be simply what Bourdieu labels a 'second order strategy' (Bourdieu 1977:42), an official pronouncement that makes action that may derive from quite other 'first-order strategies' appear to be nothing but compliance with a norm or prescription generally valued or imposed.

Such a reading can be given to the participation of indigenous Lindu elders in the village conservation organizations (LKD) negotiated by TNC as part of the conservation agreement for the Lindu enclave. The pronouncements of Lindu elders when in meetings convened by these organizations manifest a strong orientation of care for the environment, a custodial subjectivity that certainly was not so publicly highlighted previous to the formation of these organizations. But an understanding of the political motivations underlying those pronouncements, as readily evident in the concrete proposals they put forth to assure To Lindu dominance of the conservation project, reveals that their espoused environmentalist concern, couched in the idioms of enduring stewardship and the superior custodial function of (their) custom, is very much a second-order strategy by which they justify their more encompassing attempts to reassert and maintain control of the migrants who now inhabit the Lindu plain as well. Environmentalism is part of the agenda of strengthening the executive force of indigenous To Lindu customary institutions and regulations.

Indeed, the opportunity to assert the prerogatives of their categorical indigenous status seems of far more weight in determining their mode of participation and their enunciation of environmentalist orientation than the fact of

participation in the LKD, potentially interpretable as a practice inducing the emergence of an environmentalist orientation. Agrawal perhaps too naïvely accepts the Foucauldian dynamic of the power of the state imposing a subjectivity it desires through the medium of intimate government. Villagers may very well accept the terms of cooperative management agreements and operation of village conservation organizations because they function as vehicles for the advancement of non-governmental agendas from the participants themselves under the guise of the governmentally desired orientation. In downplaying the political dimension of participation, the pragmatic contextualization of declarations whose semantic content he takes at face value, Agrawal's analysis may suffer from the same shortcoming that he attributes to others: paying insufficient attention to on-the-ground politics. The Foucauldian dynamic of environmentality may be less an imposition of government-desired subjectivity than an overt frame to which allegiance is shown by local agents in order to further their own political agenda of re-asserting customary control under the warrant of indigeneity.

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End notes

1. Colchester (1994: *Salvaging* section 4:7) notes Cordell's observation on the lack of substantial sharing of power in co-management of national parks in Australia: 'Judging from Kakadu and Uluru, Aboriginal involvement in protected area management is on the verge of degenerating into Smokey Bear-style ranger training, in which the role of traditional owners is simply to add an

interpretive and marketable ethnic element to running the parks.'

2. See Acciaioli (2001, 2002) for accounts of how the To Lindu in the early 1990s were aided by Yayasan Tanah Merdeka in alliance with other NGOs in Palu to avoid being resettled as a result of a planned hydroelectric scheme involving damming the Gumbasa River flowing from Lake Lindu and consequently raising the level of the lake by seven metres, thus inundating all villages and wet-rice lands and forcing the 'local transmigration' of all inhabitants of the plain.
3. The term *to*, along with its cognate *tau*, means 'person' or 'people'. *To* is generally prefaced to the names of ethnic groups within Central Sulawesi.
4. WALHI – Sulteng, along with other NGOs in Palu, such as YTM, has disputed that the floods were indeed caused or exacerbated by the deforestation of Dongi-Dongi, noting that, historically, flooding has been periodic in the Palolo Valley. However, the scale of the December 2003 flood far exceeded these earlier floods, and I am inclined to accept TNC's argument and evidence that the occupation of the DongiDongi watershed area did indeed account for the scale of that flooding. See the interchange between Sangadji and Acciaioli in the October 2004 issue of *Inside Indonesia* (Acciaioli 2004:7).
5. Throughout all his speeches during this visit, including to individual farmers at their gardens, he included the refrain that the people whose lands were devastated in Dongi-Dongi and the Palolo Valley were now just bodies (*badan saja*), without souls (*jiwa*) any longer, as their lives had been used up (*kehabisan hidup*).

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19

Indigenous peoples and parks in Malaysia: issues and questions

HOOD SALLEH AND KEITH A. BETTINGER

Introduction

This chapter seeks to describe the relationship between indigenous peoples and several protected areas in Malaysia, namely Krau Wildlife Reserve, Taman Negara National Park, Endau Rompin National Park, Kinabalu National Park and Gunung Mulu National Park. These protected areas were chosen because they all illustrate various aspects of the relationship between protected areas and indigenous people. Krau Wildlife Refuge in Pahang is used by groups of Chewong and Jah Hut. These two groups live outside the park, but maintain a certain level of traditional ownership rights to the reserve. Taman Negara, covering parts of Pahang, Kelantan and Terenganu, is the home of a group of the Batek Negrito people. This case study describes the relationship of grudging tolerance on the part of the park administration towards a small and truly nomadic group of indigenous people. Endau Rompin National Park in Johor shows how indigenous people are currently employed in parks and conservation in Malaysia. The description of Gunung Mulu provides a portrait of the Eastern Penan, another hunter-gather group numbering about 400, who live in and have customary access rights to the park. This instance also reveals how the Sarawak Forestry Department (SFD) has handled an indigenous population residing within a protected area. Lastly, Kinabalu Park illustrates the treatment of indigenous people in the state of Sabah, in which indigenous groups have far more influence than any of the other states of Malaysia. The aim of the chapter

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is to compare the treatment of indigenous people by the various park systems throughout the country, and to raise questions about the nature of park–people relations in Malaysia.

Malaysia's parks are an interesting case study because there is such a variety; there is only one 'true' national park, the recently gazetted Penang National Park. All of the other parks are administered by the several states, with Sabah and Sarawak having the most developed park systems; the parks of Sarawak are referred to as 'National Parks' though they are administered at the state level.[1]

Indigenous people and protected areas: general introduction

> It is apparent that some people have already learned how to live in balance with their available resources. Sadly, these people are now considered 'primitive', even though their technology has sustained their society for hundreds of generations in a quite satisfying way. Few would suggest that such people should be kept in a 'backward' state if they desire to become part of modern 'television society', but it is important to document the traditional wisdom of these people before it is lost. Furthermore, if such 'traditional' people desire to maintain their way of life – and many of them actually enjoy a life where 20 hours of work a week produces enough of life's necessities to allow plenty of free time to play with their children, flirt with their mates, practice religious beliefs daily and tell stories around the fire – then protected areas can provide a means by which they can do so (Category VII…); in such cases, joint management arrangements should be made between protected-area authorities and societies which have traditionally-managed resources. (McNeely & Miller 1983)

This quotation is illustrative of one pole of a continuum of discourse on indigenous peoples and parks. The passage depicts the traditional conflict that existed between indigenous peoples and modern societies, and how protected areas could ideally serve as a sort of buffer. Throughout the world protected areas coincide with the traditional ranges and lands of indigenous people. According to IUCN figures, around 70% of protected areas worldwide are inhabited (Dixon & Sherman 1991, cited in Colchester 1997). The first national park, Yellowstone in the United States, was home to several groups of native Americans, but they were soon evicted without compensation. Now the name 'Yellowstone' indicates a conservation philosophy, an approach to protected-area

management that includes exclusion and strict protection. This model has been applied to national parks and other protected areas in many countries, and as a result indigenous people have been dispossessed of their lands for the sake of conservation. A pattern has developed in which indigenous people, 'having once been independent nations within their own territories … have been pushed out of their lands which have been expropriated by government agencies in the name of conservation' (Colchester 2002). In many cases governments have used the excuse of protected areas to justify territorial claims and exercise control over minorities while appropriating resources (Buergin 2001), and hence some environmentalists have come to believe that national parks exist for expropriation rather than conservation (Colchester 1997).

Exclusion, however, frequently ignores the fact that the landscape planners quest to conserve has often evolved through centuries and even millennia of human–ecosystem interaction (Adams & McShane 1992; Redford & Padoch 1992; Nabhan & Tuxill 2001). 'Throughout time, people have pruned, harvested, gathered, cultivated, transplanted, propagated, sowed, burned and weeded to increase chances of human survival', contend Watson *et al.* (2002:3). Colchester (1997) argues that traditional lands are less degraded than surrounding lands because the emphasis of many indigenous peoples is self-sufficiency rather than surplus and trade.

At the current level of discussion in many park systems, indigenous peoples at best are 'stakeholders who must compete with … other interest groups to get their voice heard' (Colchester 2002:27). Most interactions between indigenous people and parks are marked by conflict rather than cooperation. In many instances indigenous people are marginalized and their concerns are given mere lip service. From the initial gazetting and planning the relationship is contentious and even antagonistic; indigenous inhabitants see the parks as a burden or usurper of traditional lands. Poaching frequently increases, as does other criminal activity. The damage done to the park by disaffected residents can often outweigh any ecological impact that a continuation of their traditional lifestyles might cause. Brookfield *et al.* (1995:81) suggest that conservation 'in which small numbers of people live, farm, hunt, and forage [is] usually more successful when they are managed by the people themselves'. In many of the cases in which indigenous people have been granted usage rights by protected-area authorities, the relationship seems to be tentative and conditional. For example, hunting and fishing activities might be allowed if, and only if, there is an acceptably limited impact on park resources (Cleary & Eaton 1996). This strongly implies that the rights of indigenous inhabitants are considered only after conservation objectives, and that there is no effort to find compromises or mutually beneficial arrangements, even when the presence of

indigenous peoples could enhance conservation objectives, or in cases in which the face of the landscape is due to the subtle influence of native peoples over the course of hundreds and thousands of years. In the case of the Penan in Gunung Mulu National Park, described below, it seems that the presence of the Penan is tolerated because they are seen as ecologically benign. There is an attitude that the indigenous people in these cases are equivalent to wildlife.

As the agendas and priorities of conservation planners based in capitals and remote headquarters of development organizations are realized, indigenous people lose not only their lands, but also their civilizations. Problems that come with increasing exposure to the 'developed' world include disrupting the transmission of traditional knowledge and wisdom in the community (UNESCO 2001). Dislocation and relocation destroys generations-old bonds to traditional land, and ties within communities and clan groups are strained.

There is, however, growing recognition of the rights of indigenous people in protected areas, and there seems to be an erosion of the strict adherence to the 'Yellowstone model' of exclusion. Several multilateral bodies are putting into writing their commitment to indigenous peoples, including the International Labour Organization (ILO), with Convention 169,[2] and the United Nations, with the draft Declaration on the Rights of Indigenous People. The declaration asserts that indigenous people shall not be removed from lands or territories, and affirms their right to preserve their cultures, practices, languages and traditions.

In Malaysia indigenous peoples are often portrayed in the media as opponents of conservation, with stories appearing from time to time about their skills and knowledge being co-opted by unscrupulous businessmen to harvest endangered forest products, including tigers in the southern peninsula and Rafflesia blooms throughout the country. These portrayals suggest that the indigenous people are ignorant of the concepts of endangered species and biological diversity. In several cases indigenous people have been arrested for setting up roadblocks to logging concessions. However, the story that logging concessions often conflict with traditional land-use patterns does not get equivalent attention; almost no effort is made to understand the traditional land-use patterns themselves. This resistance to encroachment is often portrayed in the media as an impediment to progress.

In the ongoing dialogue over protected-area innovation, however, it is becoming increasingly accepted that protected areas that involve indigenous residents are often more successful than protected areas that follow the old 'Yellowstone model'. Moreover, indigenous participation in planning and management opens the door to innovative strategies and creates possibilities for new and more effective ways to achieve conservation objectives. Molnar *et al.*

(2004:42) present several elements that enable indigenous people and protected areas to coexist. These include:

1. Secure tenure and access rights.
2. Policy and agency support for local communities.
3. Access to markets that value indigenous products.
4. Planning and financing for projects developed locally rather than centrally.
5. Incorporation of indigenous people as partners in conservation and research projects.

The state and indigenous people in Malaysia

In Southeast Asia, though, most of the governments do not participate in international conventions and agreements that address indigenous rights (Xanthaki 2003). In Malaysia the situation is better than some surrounding countries, but indigenous people are still shunted aside by state and national planners. There is no nationwide policy towards indigenous people in Malaysia, and the relationship between the state and indigenous people is codified in different laws in the Peninsula, Sabah and Sarawak.

Indigenous people on the Peninsula are covered under the pre-independence Aboriginal Peoples Act 1954. It defines three types of lands, including Aboriginal inhabited places, Aboriginal areas and Aboriginal reserves. The law gives the government the power to establish Aboriginal reserves, which are envisioned as permanent locations. Furthermore, the law says that Aboriginal reserves can lose their protection by a notification in the government gazette by the state governments. This power has apparently been exercised frequently (see Nicholas & Williams-Hunt 1994:13; and *New Straits Times*, 3.12.95, cited in Lim 1997). However, the law expressly states that within Aboriginal reserves the land may not be considered reserved forest (Lim 1997). This law does not establish the right of the Orang Asli to own their traditional lands and allows the state to evict any indigenous community without compensation and without providing substitute lands. In Sabah and Sarawak, however, the respective laws do recognize usage rights over customary lands, but not ownership rights (Xanthaki 2003). While these customary laws do not include tenure and title, they are a starting point. The state, though, has absolute control and final say over these lands, and they are subject to state planning and the system of land use priorities imposed from above. On the whole, it appears that the government's policies on land have tended to neglect or exclude the rights of indigenous people.[3]

For the past 30 years Malaysia has experienced rapid economic growth and development. Previously, indigenous peoples' territories covered much of the Peninsula and nearly all of the states of Sabah and Sarawak. These traditional territories have since been gradually eroded. Outside the heavily urbanized area of the western Peninsula, part of Malaysia's development has been based on agricultural development, including the introduction of rubber and palm-oil plantations. Not only has the export of these primary commodities helped to finance Malaysia's modernization, but the plantations have also played a large role in FELDA resettlement and land distribution schemes.[4] Plantation agriculture has been promoted as a way for Malaysians to earn a living and to earn a homestead. The growth of the agricultural sector has followed a pattern of extensification rather than intensification (Brookfield *et al.* 1995:61). Traditional agricultural practices, such as swidden farming, are seen by the government as inefficient uses of land. 'Rehabilitation projects', asserts Colchester (1993:175) 'really means that the State and Federal authorities plan to resettle the [indigenous people] from the longhouse communities and take over their lands for conversion into plantations and agribusiness, where the native people will become a labour force more obedient to the dictates of central government and the external market'. Nicholas (2002:38) argues that 'the ideology that is imposed on the Orang Asli assumes that it is the duty of a people to maximize the exploitation of resources bestowed on them by nature…failure to do this necessarily implies 'backwardness'.'

In addition to the push to industrialize and earn foreign exchange through the export of primary commodities, there are other pressures on the land. Hasan *et al.* (1997) write that in Malaysia there is a political push to create more nature parks for economic reasons. They argue that the state is aware of the money to be made through ecotourism and nature tourism, which is a way to earn foreign exchange and diversify the economy. Malaysia is increasingly seeking to capitalize on its location in a biodiversity hotspot (see Chapter 1), and pressure to adhere to international covenants and agreements contributes to a strong protectionist ideology. Thus, land policies have been driven by social and economic development concerns, and more recently by longer-term strategies of 'sustainable use' and, to a lesser degree, conservation. Influences on policy come from within and without; in the case of internal influences they are mainly economic, whereas external influences include pressure to conform to international covenants. In most, if not all cases, indigenous rights and claims have taken a backseat to these considerations.

Indigenous people on the Peninsula fall into a strange niche in terms of the laws that apply to them. According to the Constitution of Malaysia, land issues fall under the list of state responsibilities and privileges (list II).[5] However, the

welfare of the Orang Asli falls under the purview of the federal government according to list I. Article 8 suggests that in considering the needs of the Orang Asli, the federal government should consider land needs, but land, as mentioned previously, is a state matter (Lim 1997). This catch-22 could be seen as an excuse on the part of the federal government not to deal with Orang Asli land issues. Lim (1997:173) points out 'the power of the Federal Government to require State Governments to grant to it land for federal purposes has yet to be exercised for the purpose of creating Orang Asli reservations'.

The fate of the Orang Asli in the Peninsula seems to be influenced greatly by bureaucratic inefficiency and scapegoating. Until the 1990s the Department of Orang Asli Affairs (JHEOA)[6] exercised total authority over all matters pertaining to the Orang Asli. Other departments would yield to JHEOA under the reasoning that their bureaucratic portfolio did not include authority over the Orang Asli. The JHEOA has been widely criticized, as it did not have the resources to adequately address the needs of the Orang Asli, and in the 1990s other government departments began assisting JHEOA. JHEOA has also been criticized because there are no Orang Asli in its upper echelons, and has been accused of pursuing a policy of Islamization whereby Orang Asli groups that convert to Islam are rewarded and families that do not convert are discriminated against. Whatever the case may be, it is fair to say that JHEOA policies are a reflection of government policies towards the Orang Asli, and throughout most of Malaysia's history they have been treated as an unwanted stepchild.

Another law that is applicable to protected areas and the Orang Asli is the National Forestry Act of 1984, which states that forest produce is property of the state and that harvesting requires a licence (Lim 1997). These laws give the federal and state governments a tremendous amount of leverage against the Orang Asli. Since forests are such a productive resource in Malaysia, it is in the interest of the states to maintain control over forest lands. In contrast, Orang Asli reserves by law cannot serve other functions; it does not make economic sense for the states to gazette lands for the Orang Asli. There seems to be no mechanism for creating dual-use land, i.e. protected areas that also serve as homesteads for indigenous groups, and so JHEOA and the Forestry Department work at cross-purposes. There is also no policy within the Department of Wildlife and National Parks (DWNP) that addresses the Orang Asli; even in cases where Orang Asli live in or use protected areas under DWNP, it is JHEOA that is responsible for the Orang Asli. All interactions with protected areas are thus ad hoc and subject to the caprices of the local management.

Indigenous groups have secured a number of judicial victories over the years, though. The courts of Malaysia seem to be sympathetic to the land

claims in Malaysia, though the court is by definition not a proactive body; it must wait until cases come to it. More Orang Asli cases reached the bench during the 1990s, as there developed a general awareness of shared experience among the various Orang Asli groups in the Peninsula. This awareness contributed to a more unified movement and more cooperation amongst the groups, which enhanced their power and resources (Nicholas 2000). Thus, the Orang Asli in some cases realized that they could challenge the government and other interests in the courts. *Adong bin Kuwau* v. *Kerajaan Negri Johor* and *Nor Anak Nyawai* v. *Borneo Pulp Plantation* were both landmark cases in Malaysia, as the courts affirmed that indigenous people had 'the right to continue to live on their lands as their forefathers had lived' and that 'the common law respects the pre-existing rights under native law or custom' (cited in Xanthaki 2003:474).

Forces acting on indigenous people in and around protected areas in Malaysia

In order to understand the relationship between protected areas and indigenous peoples in Malaysia, it helps to quickly examine the forces acting on indigenous people in both the Peninsula and in Sabah and Sarawak.

Globalization

There are numerous forces tied to globalization affecting the indigenous people in protected areas in Malaysia (and around the world, for that matter). Ecotourism, conservation and 'projectization' of parks are all currents which influence traditional communities and their relationships with the land on which they live and depend for survival.

Some commentators see globalization as an almost consciously pernicious influence:

> …the current process of economic, political, and cultural globalization, to a high degree, is a process in which a dominating 'culture' shaped by an ideology of competition, unlimited growth, and consumerism, with a strong tendency to economize all spheres of life, in the name of 'modernization' and 'development' is defining its culture specific frames as 'global' or 'universal', while trying to impose them on the varied, heterogeneous groups and institutions which constitute and are 'incorporated' into the merging 'global' community. (Buergin 2001:3)

This quotation is distinctly one sided. Global trends have also benefited indigenous people, for example by increasing awareness and creating markets for their products. For the Orang Asli in the Peninsula and the indigenous peoples of Borneo globalization is a mixed blessing. Their lands have become more valuable due to the export-oriented development strategies pursued by the planners in Kuala Lumpur. Furthermore, as Malaysia enters into more multilateral pacts and covenants, the government is increasingly pressured to conserve its natural resources. However, globalization has also led to an increasing awareness as to the concerns of indigenous peoples in Malaysia, and criticism from abroad has led the government to take measures to improve its image vis-à-vis the indigenous groups.[7]

Modernization

Interaction between the government and some Orang Asli groups began in earnest during the period of communist insurgency known in Malaysia as The Emergency (1948–1960). During this time the guerrillas and the government competed for 'the hearts and minds' of the people of the jungle; they were co-opted and courted by one side and then the other. It is during this period that the Orang Asli in the Peninsula first gained the attention of the British Colonial Authorities. They were factored into strategic calculations, and an extensive campaign to construct strategic hamlets was begun to consolidate the groups. This plan failed militarily,[8] but the British constructed a number of outposts in the hinterlands, which provided basic services to the Orang Asli while using them for intelligence. When the emergency ended, the newly independent government of Malaya was confronted with the problem of what to do with the Orang Asli.[9] As mentioned earlier, this question was largely ignored, though the official policy adopted was to integrate the Orang Asli into the Malay mainstream (Nicholas 2002).

As time went on, it became obvious that the government's preoccupation was modernization. Confronted with a lopsided distribution of wealth that threatened to undermine the fragile political alliances that underlay the federation, the first few five-year plans centred on generating wealth and redistributing economic power to the majority Malays. During this time Malay identity became increasingly important for political and economic reasons. This identity was directly tied to Islam and speaking the Malay language. Thus, the concerns of the Orang Asli were separated from those of the other groups of society, and given their demographics they came to be inconsequential in politics.[10] Lye Tuck-Po suggests that 'to [the Bateks] are attributed the essential qualities that the Malay wished to rid itself of ' (Lye 2002:179).

Marketization is another force related to modernization that is disruptive to traditional cultures, which has been particularly acute in Malaysia. As Shah (1995:34) explains:

> The main forces at work against a stationary socioeconomic environment are technological progress and newly emerging economic opportunities; and population growth. With technological progress, which implies improved communications and transport, the physical and the market isolation of the rural population decreases. As a result, opportunities to buy and sell products emerge. It is worth speculating that previously self-sufficient villagers have an inherent weakness in adapting to contact with the market. Then, it is likely that in order to acquire market products which require cash, the natural resources are overused.

There is a very strong current of modernization in Malaysia vis-à-vis indigenous populations. Books such as *Save the Penans* suggest that the 400 Penan who still are nomadic are relics and that outside influences wish to preserve them 'in the hope that they can be made into display and research materials for the world community' (Khaider 1994:12). The author of this book (himself a Malay Muslim) also cites several pronouncements by then Prime Minister Mahathir Mohammad that the Penan need to be developed and that advocates for the rights of the Penan in reality are only interested in holding back the progress of Malaysia (Khaider 1994). This nationalistic argument transcends and renders moot any concerns for subgroups within the larger nation. The book also sums up the perceived dichotomy between the interests of the people on the whole and the minority of Penan:

> However, logging activities have contributed to the state's economy and have brought various benefits to Sarawak and its population of 1.8 million. One third, or RM3.3 billion, of the state's revenues comes from the logging sector. This revenue is used to finance various development projects for the people of the many races there. Apart from that, the logging sector has provided both direct and indirect employment for about 100000 people in rural areas, thereby reducing the incidence of poverty.... the Penans should not blame the State Government for the progress of development or for logging activities, because they already have all that they have ever wanted, except for ownership of the whole of Sarawak forests.

This passage succinctly sums up the dilemma and helps one to understand the rationale of state planners. Utilization of forest resources is inextricably

linked to the fortunes of Sarawak. One might refer to this as a 'natural resource exploitation trap'; the economy has become so dependent on logging that the well-being of a substantial proportion of the people of Sarawak is tied to timber extraction. Furthermore, the short political horizons of elected politicians, as well as the symbiotic relationship between politicians and timber companies, ensures that the situation perpetuates itself.

Politics

Indigenous groups have a much greater political significance in Sabah and Sarawak than they do in the Peninsula. In Peninsular Malaysia the Orang Asli number just over 100000 people and are spread throughout the various states. They are just beginning to organize politically (Nicholas 2000). The Orang Asli have one senator in the Dewan Rakyat,[11] who is not elected, and thus the United Malay National Organization (UMNO),[12] by far the most powerful political party in the country, feels no political pressure to address the needs of the Orang Asli.

In Sabah and Sarawak, on the other hand, indigenous groups form powerful political blocs and wield substantial economic influence as well. In Sabah the ruling party is made up of Kadazan-Dusun, and frequently butts heads with the ruling Barisan Nasional.

Islamization

Peninsular Malaysia presents a very interesting case due to the fact that the state religion is Islam, yet the nation is one of the most pluralistic in the world. In discussing the relationship of the state to the Orang Asli, it is difficult to separate Islamization from modernization. This is extremely important when discussing the Orang Asli within the broader context of Malaysia and its historical progression, as Islamization has become an important facet of the Malay conception of 'modern' and 'developed'.

As mentioned above, starting in 1961 it was the official policy of the government, through the JHEOA (Orang Asli Affairs Department), to integrate the Orang Asli into the mainstream. This suggests a crude 'modern-primitive' paradigm on the part of the government. However, as Malaysia has developed its unique national character, Islam has crept into the paradigm as well. It is widely held that there has been a general trend of political Islamization since around 1980. The JHEOA, an arm of the government, reflects the preferences and priorities of the ruling party, and thus it is reasonable to expect that JHEOA would view Islamization as part of its portfolio. Several scholars have commented that the policies of the government, through the JHEOA, have become

primarily geared towards the Islamization of the Orang Asli. Nicholas (2002) asserts that a government *Dakwah Orang Asli* department[13] has worked with JHEOA to convert the Orang Asli using a 'positive discrimination' strategy in which converts are rewarded with housing upgrades and other preferential treatment.

Another aspect of this conflation of modernization and Islam that impacts the Orang Asli is a cultural component. Islam, as most religions do, dictates many aspects of societal interaction, as well as personal behaviour. Thus, these personal behaviours become a part of the culture, which is then seen as an essential part of modernization. Many characteristics of Orang Asli culture that are in conflict with Islamic custom are then labelled as backwards, the antithesis of development.

It is interesting to note that in the Aboriginal Peoples Act of 1954 there is a section that explicitly states that Aborigines who convert to Islam (or any other religion) but maintain an Aboriginal lifestyle and language are still Aborigines. However, Orang Asli who convert to Islam are considered to be 'entering Malayness'. There are also missionary activities organized by university groups to proselytize amongst the Orang Asli, and federal funding is made available for these purposes.

For its part, JHEOA maintains that Islamization is not part of the agency's mandate; JHEOA Director-General Fadzil Mahamud said recently in response to Islamization allegations that 'Islamization of the Orang Asli is not done by us. There are government agencies to handle that. We only play host to their development'.[14]

Protected areas and Orang Asli: three cases

This history, the political contestations and the bureaucratic framework all set the discursive stage for the interaction between conservation/preservation interests and the Orang Asli. The first three instances below provide different examples of that interaction. Since there is no clear policy governing the treatment of the Orang Asli in and around national parks, policies and decisions are made in an ad hoc manner.

The following two cases describe indigenous groups and the government in Sabah and Sarawak.

Taman Negara and the Batek

Taman Negara was gazetted by three separate state acts beginning in 1938. It covers 4343 km^2 in the states of Pahang, Kelantan and Terengganu

(WWF 1998). Although its name means 'National Park' in Malay, it is excluded from the provisions of the National Parks Act of 1980, though the Department of Wildlife and National Parks (DWNP) administers Taman Negara. This park is the home to a significant number of Batek; Lye (2002:165) estimates that roughly half the Batek of Pahang recognize Taman Negara as their home. The relationship between the park and the people in this case is not a positive one; although the Batek have existed in the area for years there is no explicit recognition of their rights to the land, and for the most part they live in the park at the leisure of the DWNP.

Part of the conflict is rooted in the differing views of the forest. Lye (2002) describes a contrast of worldviews and conservation consciousness characteristic of the relationship between the Batek and Taman Negara: 'where Batek conservation privileges the presence of people, scientific conservation privileges absence…where for the Batek no boundaries exist between culture and nature, for the park administrators and conservationists, no nature is possible without boundaries' (Lye 2002:162).

The Batek are a nomadic group and are known for their dependence on the forest. They possess extensive traditional ecological knowledge and are thus an invaluable resource. The rub in the case of Taman Negara has been how to use this resource. The park authorities have been criticized for excluding the Batek from administration and management. On some levels this may be a valid criticism, but on others it seems unrealistic, given the lifestyle of the Batek. It cannot be denied, however, that the Batek people are intimately acquainted with the area inside the park boundary. The park administration could incorporate Batek traditional ecological knowledge into management, but this would require a re-examination of the traditional approach to conservation.

There have also been numerous reports that the park rangers and other officials assigned permanently to Taman Negara are involved in organized illegal sale of forest resources. The rangers, the reports assert, use the Batek to harvest valuable products and then serve as middlemen, selling them in lucrative and far-off markets.

Endau Rompin and the employment of indigenous peoples

Endau Rompin Park was established in 1989 and covers 800 square kilometres in Johor and Pahang.[15] It is notable for its protection of lowland dipterocarp forest and the presence of the Sumatran rhinoceros (WWF 1998). Kampung Peta, near the park, is the home of around 270 Jakun. Many have been trained by the Johor National Parks Corporation as park guides, and Jakun serve as guides to trekkers, as in other parts of Malaysia.

In Endau Rompin around 70% of the staff are Orang Asli, but they are not qualified to hold higher positions,[16] such as assistant wildlife officers. They work mainly as general workers doing maintenance, cleaning and gardening. Park officials at Endau Rompin say that the Orang Asli prefer not to stay long in one job, which leads to management difficulties. They work on a daily rate for the most part, and, thus, management maintains that they are not as reliable as contract workers. They are also seen as very shy and are reluctant to interact with visitors, and their poor command of the English language serves to reinforce this shyness. Johor National Parks Corporation staff seem to understand the potential value of Orang Asli traditional ecological knowledge, and there is a desire to work with the Orang Asli, but suitable arrangements have not been developed. Thus, while there seems to be an individual recognition of the potential contributions that could be made by the Jakun, there is no *institutional* recognition.

Krau National Wildlife Reserve and the Jah Hut and Chewong

Krau National Wildlife Reserve is a category IV protected area under the IUCN classification system and covers just over 53000 hectares in Pahang state. It was gazetted in 1923 and is one of the oldest protected areas in Malaysia. Throughout its history its boundaries have been redrawn due to logging activities and agricultural development. The area is inhabited by groups of Jah Hut and Chewong. The former practise settled agriculture, while the latter live largely by hunting and gathering. The Jah Hut live on land that was excised from the reserve in 1966 for development. In 1977 a road was constructed through the reserve, which facilitated logging around the road. The logged-out areas were given to the Orang Asli there. The JHEOA has repeatedly proposed the construction of a sawmill in the reserve, but this proposal has been rejected. Hunting and fishing are prohibited in the reserve to everyone but the Orang Asli.

The Orang Asli around Krau are allowed to enter the reserve and extract non-timber forest products for their own consumption, but not for sale. Poaching occurs, however, as in most protected areas in Malaysia, but the protected-area managers look the other way in many cases. From time to time, however, the DWNP conducts raids and arrests Orang Asli.

The people around Krau complain of inconsistency and unfairness in government policy. According to accounts, large parts of Krau have been logged, and big tracts have been cleared for FELDA land development schemes. These schemes generally involve planting oil palms, which the government counts as

forest cover. The Orang Asli complain that they are not allowed to plant oil palms and see the government as hypocritical. This illustrates a sort of double standard on the part of the government between JHEOA and FELDA and illustrates the government's priorities.

Gunung Mulu and the Penan

Gunung Mulu National Park is situated on 528 square kilometres in Sarawak. It is the largest park in that state. The park has become one of the most popular national parks in Sarawak due to its unique geological features, including limestone pillars and huge cave tunnels. It is also the home to populations of Eastern Penan and Berawan,[17] who are afforded customary use rights, including the right to hunt, fish and gather forest products (Cleary & Eaton 1996).

There are two Penan communities near Gunung Mulu National Park with a combined population of around 270 (Langub 1996). These groups were forced out of the park when it was founded. The settled Penan communities have experienced tenure conflicts with the group of Berawan who claim that the land occupied by the settled Penan belongs to them (Langub 1996). The government has constructed longhouses for the Penan in the two communities and has conducted agricultural courses, but the Penan are not enthusiastic about the courses due to the land dispute (Langub 1996).

There are other Penan, numbering around 400, who still maintain an essentially nomadic existence. This group lives within Gunung Mulu, and the park serves as a sort of habitat for them. However, the nomadic lifestyle of the Penan is a sore subject in many quarters of Malaysia, and there is a strong current of opinion that asserts the Penan need to be brought into the twenty-first century to share the fruits of development and the 'Vision 2020' modernization programme. Former Prime Minister Tun Mahathir bin Mohamad on several occasions stated that the lifestyle of the Penans 'was a factor which could hamper development and equitable distribution of wealth among the people of Sarawak' (Khaider 1994:12). He also expressed the idea that advocates for the Penan were using the minority as a tool to attack Malaysia in order to jeopardize its economic growth (Khaider 1994).

The Penan, like the Batek in Taman Negara, are essentially nomadic and do not practise shifting cultivation. While this allows them to maintain their traditional patterns, it could be argued that these two groups are left alone because it is convenient for the authorities to do so; if, however, these groups were ever seen as a threat to department priorities, they could be expelled from the parks. Hence, though the status quo is satisfactory, there is no security in the relationship for the either the Penan in Gunung Mulu or the Batek in Taman Negara.

Kinabalu, Crocker Range and the Kadazan-Dusun

Before the establishment of Kinabalu Park in 1964, the mountain had special significance in the traditions and folklore of the local people. The name Kinabalu derives from the Kadazan name 'Aki Nabalu', which means 'the revered place of the dead', and the peak was believed to be the resting place of the souls of the ancestors (Jacobson 1987). Even though the mountain's religious significance has declined with the rise of Islam and Christianity among the people, it still has important cultural significance (Jacobson 1987).

Crocker Range existed as a forest reserve before it was converted into a national park under the Parks Enactment. At 140000 hectares, it is the largest park in Sabah, but due to scarce resources the establishment of facilities and boundaries, etc., has been a drawn-out process (AIPP 2005). Crocker Range was established to protect the watersheds of 12 rivers, as well as the Rafflesia flower.

Crocker Range has always been an inhabited area, and products from the area have always been important in the regional economy. It has been noted *adat* governs the use of natural resources (AIPP 2005). Indigenous people continue to utilize the park resources and can move in and out of the park to a certain extent. However, there has never been true consultation in formulating the management plan for Crocker Range (AIPP 2005).

There have been ongoing complaints that the indigenous communities in Crocker have not been consulted in the planning and management of the park. Additionally, they claim that applications for native title to land within the park have been constantly rejected and that the park authorities try to undermine hill paddy cultivation. Furthermore, communities residing outside the boundaries have had restrictions placed on their traditional usage of the lands within the park. Tuboh *et al.* (1998) report that the state government is not attempting to build a relationship with the local communities and is not making an effort to incorporate traditional systems into the management of the park.

Analysis

Commonalities

In each of the park systems of Malaysia (Sarawak, Sabah and Peninsular Malaysia) it has been shown that the presence of indigenous peoples is a factor in park planning and management. More often than not, the indigenous groups are seen as complications rather than assets.

Traditional uses of land have been given the short shrift in all three regions, as Malaysia has sought to develop itself through industrialization and agricultural extensification over the past four decades. Forests have been seen as

resources with an extraction, rather than preservation, value. Shifting cultivation has been viewed as an inefficient use of land and has become the target of rehabilitation schemes.

In all three systems there is pressure to conserve biodiversity, but in each of the systems the authorities seem to be focusing on a strictly scientific approach to conserving biodiversity (AIPP 2005). This is attributed to the language barrier existing between local communities and the outside experts who are brought in to design and administer programmes (AIPP 2005). This points to a reluctance to utilize local expertise, including traditional ecological knowledge (TEK). One of the goals of Malaysia's biodiversity plan is to 'establish an inventory of traditional knowledge on the use of species and genetic diversity'. It also calls for [facilitation] of participation of local communities in traditional sustainable use of biological resources. There is no mention of indigenous groups within these passages, though, and so it seems as though the state is appropriating TEK.

At this point it is worth explaining the rudiments of the concept of TEK. Traditional ecological knowledge applications have been widely documented by anthropologists, advocates and even indigenous groups themselves. Pierotte and Wildcat (cited in Watson *et al.* 2002:3) suggest that TEK promotes numerous positive values relating to conservation, including:

1. Respect for non-human entities as individuals.
2. Recognition of bonds between humans and non-humans and incorporating these bonds into codes of behaviour.
3. Appreciation of the importance of local places.
4. Recognition of humans as part of the ecological system.

Furthermore, even though indigenous groups are present in the protected areas of all three regions, there is no written policy in the park's enactment of any of them dealing with these groups and their rights. For the most part provisions for indigenous peoples are made on an ad hoc basis, or are the result of years of acquiescence.

Differences

One of the primary differences between the Peninsular states and the Borneo states of Malaysia is demographic. In the Peninsula, indigenous groups make up about 5% of the population and have been, for the most part, marginalized from the decision-making process and the locus of power. In Sabah, on the other hand, indigenous people make up approximately 75% of the population. In Sarawak indigenous groups form a much larger portion of the

population, as well. Thus, the governments of the Borneo states may be more sympathetic to the plight of the indigenous groups in and around protected areas, but, on the other hand, deeply rooted tribal rivalries may create biases at the level of local management.

The status of indigenous people also varies from the Peninsula to the Borneo states. As was mentioned above, the Aboriginal Peoples Act of 1954 only applies to the Peninsula. The Federal Constitution of Malaysia groups the Malays and indigenous peoples of East Malaysia in the same class: 'natives' (Kingsbury 1998). Law in practice in Sabah and Sarawak contains elements of customary law inherited from the systems developed by the Brookes in Sarawak and the North Borneo Company in Sabah. Thus, indigenous groups have more influence in Borneo, and they have a legal basis to challenge the government and private corporations. This is not to say that conflict does not exist; there are currently a number of conflicts involving the Sarawak Forestry Department and customary tenure claims.

Another key difference between the Borneo states and the Peninsular states is economic activity. Sabah and Sarawak are much more reliant on the extraction of forest resources than the Peninsular states. Furthermore, forest resources and control over them are inextricably linked to politics in Borneo. In fact, Sarawak's economic and political development is so linked to forest resources that the economic well-being of the state depends on extraction. The state has fallen into what might be referred to as a 'timber trap'; that is, the role of forests in the economic and political systems cannot be undone without severely undermining both.

Hasan *et al.* (1997:24) note that an increasing amount of land in Malaysia is being gazetted, but the purpose of establishing parks has moved from mere conservation and preservation, as in the case of Taman Negara and Kinabalu, to 'a more multifaceted set of objectives with economic objectives playing a central role'. They suggest that ecotourism is a prime consideration in the establishment of new parks. Thus, it would stand to reason that the respective authorities in the Peninsular states and Sabah and Sarawak would be open to establishing parks with a human element, as is described in the more flexible categories of the IUCN protected-areas classification system. However, in the past two decades the flurry of gazetting in Sarawak would lead one to believe just the opposite. Colchester (1997) describes the gazetting of Loagan Bunut Park in Sarawak, in which the National Parks and Wildlife Office evicted the Berawan people there contrary to the advice of NGOs such as WWF-Malaysia. 'At the stroke of a government pen, they were to become poachers and squatters on their own lands' (Colchester 1997:110). This would seem to be an ideal case for the establishment of a protected landscape under the UNESCO programme on Man and the Biosphere.

Conclusion and summary

The legal frameworks of the Peninsula and Sabah and Sarawak seem to establish a pattern of mutual exclusiveness between indigenous lands and protected areas. For example, the Aboriginal Peoples Act of 1954 states that 'no land shall be declared a sanctuary or reserve under any written law relating to the protection of wild animals and birds' (Commissioner of Law Revision, Malaysia 2006:9).

Careful consideration of the various legal instruments that apply to the Orang Asli and indigenous peoples of Borneo suggests that there are ways within the current framework to integrate indigenous lands and protected areas. Some amending of existing legislation might be necessary, but the biggest obstacle seems to be the lack of political will. As Lim (1997:173) notes:

> What…is seen to be lacking is commitment on the part of the federal agency entrusted with the protection, well-being and advancement of the Orang Asli in creatively applying the Act in conjunction with relevant provisions and mechanisms in the Federal Constitution as a bulwark against territorial dispossession of Orang Asli lands. The NLC can play a greater role in securing adherence by the States to the Federal Government's policy regarding Orang Asli land rights. The power of the Federal Government to require State Governments to grant to it land for federal purposes has yet to be exercised for the purpose of creating Orang Asli reservations.

In addition, most interaction between parks and people in Malaysia seems to be antagonistic. Thus far there has not been concerted effort to consult indigenous groups in planning and management, and their skills and knowledge are not utilized. Arrangements between protected areas and indigenous people for the most part are ad hoc and are negotiated at the local level. Thus, there is no permanence, no guarantee for their rights to be guarded, and hence no reason for them to be committed to any conservation agendas.

End notes

1. Sabah Parks were also known as national parks until legislation in the 1980s redesignated them 'Parks'. For further discussion and clarification, see Chapters 24 and 25.
2. ILO Convention 169 'revised' the position of a previous conference.
3. In a landmark case in September 2005, a Superior Court of Appeals in Malaysia ordered the government to compensate a group of Temuans for the seizure of their land in 1996 for the construction of a new highway to the recently constructed Kuala Lumpur International Airport. This decision has been heralded by advocates for indigenous

rights and is widely expected to change land dynamics on the Peninsula in the future.

4. Federal Land Development Authority, the government agency charged with resettling rural poor onto newly developed areas.
5. The Malaysian Constitution defines state and federal powers according to three lists: List I, federal powers; List II, state powers; and List III, concurrent powers.
6. Jabatan Hal Ehwal Orang Asli.
7. See Kingsbury (1998:424): 'The existence and recognition of 'indigenous peoples' in international and transnational practices provides a legitimacy, perhaps even a language, for the pursuit of aspirations and grievances that may otherwise struggle for purchase or vocabulary. It provides access to transnational benefits supplied by private groups such as Oxfam, intergovernmental agencies such as the World Bank, and foreign governments such as the Netherlands and Norway, which have policies specifically targeted to overseas indigenous peoples; and to political and institutional fora such as the United Nations, the UN commission on Sustainable Development, the Conference of the Parties to the Biodiversity Convention, and associations of museum directors and national parks administrators. The category certainly has international purchase: publications and Internet postings of non-governmental organizations (NGOs) seeking to appeal to a Western/Northern audience regularly emphasize adverse impacts of projects on ethnic minorities or indigenous groups with distinct cultures'.
8. Nicholas (2000) asserts that thousands of Orang Asli died from disease and depression during this operation.
9. Malaysia came into being in 1963 when Singapore, Sabah and Sarawak joined the Federation of Malaya.
10. The Orang Asli make up less than 1% of the population of Peninsular Malaysia.
11. The lower house of the Malaysian parliament.
12. UMNO is the leading partner of the Barisan Nasional Coalition, which has ruled Malaysia since independence.
13. Islamic missionary activities.
14. Government agencies responsible for proselytizing include the Islamic and Malay Customary Council.
15. Endau Rompin is a generic name used to label two protected areas: Endau Rompin in Johor and Rompin Endau in Pahang. Though the park is commonly called a national park, it is administered at the state level by the private Johor National Parks Corporation (JNPC) in Johor. The information here is for the Johor portion of the park.
16. The Jakun employees do not have the educational certificates required by JNPC; thus, they are 'not qualified' on paper only.
17. The Penan also enjoy rights in Sungai Magoh, Ulu Sungai Tujoh and Sungai Adang, as well as Melana Protected Forest and Ulu Seifan (UNESCO 2001).

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20

Protecting Chek Jawa: the politics of conservation and memory at the edge of a nation

DANIEL P.S. GOH

Introduction: the reprieve at Chek Jawa

In December 2001, conservationists in Singapore scored a rare victory when they convinced the government to stop land reclamation at Tanjung Chek Jawa, probably the last coastal flats in the country. Only one square kilometre in area, Chek Jawa cradles six ecosystems and is situated at the edge of Pulau Ubin, itself a rustic island of slightly more than ten square kilometres in size at the north-eastern edge of the country (Fig. 20.1). It was no small feat. The conservation of disorderly wilderness was not a consideration of the developmental state, which preferred an orderly city in a manicured garden. The last time conservationists won a reprieve for nature was in 1992, when the government shelved plans to clear rainforests to develop a golf course in the Central Catchment Reserve. Through the 1990s, Ubin was a focus of contention between conservationists aiming to protect pockets of nature areas and a technocratic government planning to build a housing estate. Caught in this tussle was a nostalgic public that saw Ubin as the last *kampung* (Malay: village) in Singapore. In mid 2001, the government put aside its plans for Ubin in recognition of public sentiment, but indicated that land reclamation along its eastern shoreline would proceed as planned.

In the second half of 2001, a public campaign to save Chek Jawa gathered momentum. Independent studies were conducted, letters written, petitions signed, talks given, stories published and walks organized to draw public

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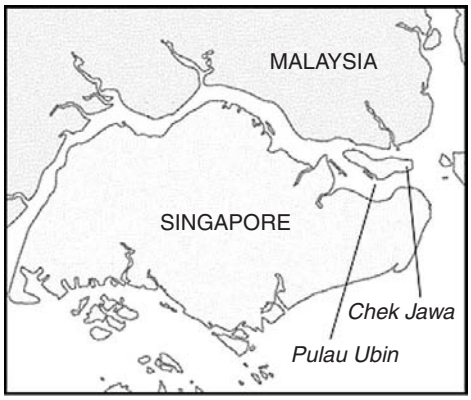

Figure 20.1. Map of Singapore showing the location of Pulau Ubin and Chek Jawa.

attention to a little-known natural site (*Straits Times* 2001). At one walk, conservationists guided over one thousand visitors, an assembly of citizens unheard of in a country where a public gathering of five people or more required a police permit. Even the Minister of National Development visited the site to see what the excitement was all about. The bulldozers had already gone through Kampung Melayu, Surau and Chek Jawa, three villages in the area, and flags were posted to mark the final doze to clear the area. To the pleasant surprise of conservationists, the execution was stayed at the last moment. Recently, the government announced a $10 million project to build a boardwalk, complete with lookout platforms, a seven-storey viewing tower and a visitor and research centre (*Straits Times* 2005).

This augurs well for Chek Jawa, as two other areas that were established as 'nature reserves' in 2001, Sungei Buloh Wetland Reserve and Labrador Nature Reserve, began their career in the same manner (Ministry of the Environment 2002:11–12): the government promised a stay on destruction contingent on developmental demands and placed the sites to be managed by park authorities for local ecotourism. Protected nature sites fall into two categories in Singapore. The first are 'nature areas' that are conserved as potential national parks in the state's land-use plan, but are not accorded legal protection. The second are 'nature reserves', fully fledged national parks given legal protection under the National Parks Act. There are fifteen nature areas and four nature reserves, which, in addition to the two mentioned above, include the biodiversity-rich Bukit Timah and Central Catchment Reserves. They make up a total of 3130 hectares or 5% of Singapore's land area. By all signs, Chek Jawa is a national park in the making. How do we explain this rare 'major policy U-turn' (*Straits Times* 2002a), the concession to politically powerless conservationists by a resolutely developmental state with an iron grip on the political process and the land?

Nation building and nature conservation

The Chek Jawa reprieve raises important questions about conservation in postcolonial countries, where economic modernization is seen as the path of progress from an exploited colonial past, and nation building the cultural project used to mobilize multiple social groups to that end. Postcolonial cultural theorists have taken the nationalist project to task, spelling out the principles underpinning nationalism. Two principles are pertinent here. First, the nation is first and foremost a cultural artefact, rooted in the simultaneous imagination of a shared community by a group of strangers (Anderson 1991). Second, the nation is narrated into imagination by turning elements of everyday life into signs of shared culture and identity (Bhabha 1990). Seen in this light, national parks are potential symbols of shared identity that aid in the imagination of a national community.

The relationship between postcolonial nationalism and conservation has been neglected in the literature on national parks, despite the obvious reference to the 'national' in the object of conservation scholarship and politics. In part, this is due to the view that the cosmopolitan cosmology of conservationism and international institutionalization of environmental management are displacing nationalist ideologies and state sovereignty (Deudney 1993; Litfin 1993; Hurrell 1994; Giner & Tábara 1999). The implication is that the relative power of the nation-state is eroding vis-à-vis global civil society and international environmental regimes. In the context of environmental politics in Southeast Asia, the case studies in Hirsch and Warren (1998) have rightly criticized middle-class conservationism and its affective discourse by pointing to how they interact with concrete material conflicts between resource-hungry developmental states and local communities without necessarily helping the latter. Indeed, the nation-state continues to loom large and significant for conservation in the region. But this criticism does not mean that conservationist discourse is irredeemably middle class in its affect and expression of material interest. In fact, as I shall show using the case of Chek Jawa, the affective power of conservationist discourse is derived from the memories and experiences of local communities, from which the postcolonial state also draws to constitute its nation-building project. In other words, local memories of natural places form the very cultural terrain on which political battles are fought between developmental states and conservationists.

State power is not inherently detrimental to the environment and may well serve conservation in a democracy, but specifically postcolonial nation-states pose a contradiction to environmental protection and justice. Essentially, the problem lies in the fact that postcolonial nation-states are institutional

and ideological successors to colonial states. Grove (1995) has shown that environmentalism originated in European colonial experiences with tropical environments. Ecological change due to colonial exploitation spurred sustainable exploitation policies geared to preserve colonial capitalism. In the context of modern Southeast Asia, Bryant and Parnwell (1996:6–8) argue that colonial administration bequeathed the legacies of functional organization and imperative for efficient resource extraction and cultural technologies for inventorying resources for better political control. It is important to add to this insight on institutional legacies that the postcolonial nation-state also inherited the ideology of economic development as the measure and meaning of progress and the imagination of wildlife reserves as symbols of colonial pride, as Kathirithamby-Wells (2005:189–226) observes in the case of Malaya.

The seat of British colonialism in Southeast Asia since its founding in 1819, Singapore attained self-rule in 1959 and became an independent nation-state in 1965. The Singapore state is the exemplary developmental state. From the beginning of its total developmental plan, the Singapore government took steps to implement a 'clean and green' programme to complement its industrialization and urban planning, with the 'green' component consisting of planting manicured gardens and trees as aesthetic cosmetic to high-rise concrete. Nature areas were cleared at technocratic will and often in the face of conservationist petitions. In the 1990s, only the Central Catchment forests came closest in legal definition and national imagination to be considered a national park, although the forests served the primary function of water catchment for reservoirs supplying water to the city-state. Even then, the forests came under constant pressure from highway construction, high-end residential encroachment and infrastructural and commercial developments. The 1992 plan for a golf course is a case in point. Conservationists managed to move the government to shelve the plan partly because they made use of the symbolic imagination of the forests as a national park for all Singaporeans as opposed to a golf club for exclusive elites (Nature Society Singapore 1992:27–32). In contrast, Chek Jawa was insignificant in the national imagination. In fact, conservationists only discovered the coastal flats less than a year before the planned destruction. How does a nature site under threat from development and non-existent in the national imagination become a protected area?

Chek Jawa was saved because conservationists were able to harness the collective memories and experiences of Pulau Ubin, the island on which Chek Jawa is found. Ubin holds a special position at the edge of the national imagination. The case of Chek Jawa is a good one to consider because it was a highly localized affair. Global considerations such as international environmental law

and pressure from transnational non-governmental organizations (NGOs) did not come into play. At the same time, because local communities on the island had been reduced to a handful of dispersed families by forced resettlement, competing material interests also did not come into play. However, this did not mean that local memories disappeared with the resettled residents. In fact, these memories have been increasingly imbibed by conservationists, outdoor enthusiasts and leisure-seekers through the years and dispersed in the public memory. Given the absence of local material interests, we can consider how the balance of competing historical narratives and memories defining the meaningful imagination of nature areas in the national consciousness may influence conservation.

Theoretical framework

Postcolonial cultural theorists have observed that history is a central narrative in the postcolonial nation-building project because history positions the imagined nation in a temporal plane of progress and orientates the people towards a common identity. A national history draws on the fragments of peoples' memories and combines them in a coherent, linear and universal whole to narrate development towards the manifest destiny of the nation. At the same time, a national history necessarily suppresses the formation of alternative histories (Chatterjee 1993:95–115). But the subjugation of alternative histories is never complete, and the latter subsist as 'affective narratives of human belonging' that challenge and interrupt the uncompromising truth of national history (Chakrabarty 2000:71). These alternative histories constitute multiple ways of collective remembering, expressed in multiple genres and are often non-linear and irreducible to one another. To facilitate my analysis, I refer to national history as History N and alternative histories as Histories A.

I take as axiomatic that places are meaningful spaces produced by our social interactions in them and they reside in the reminiscences of our lived experiences. The appropriation of these 'placed' memories therefore allows History N to construct the nation as a collectively imagined meaningful place. At the same time, in the pursuit of the manifest destiny of the nation, the state often tramples over the lives of its citizens and the places that are dear to the latter, whether these are natural, rural or urban habitats. As memories are not erasable, the reminiscences of eradicated ways of life and places are co-opted into History N as an anterior moment in the march of the nation, thereby turning anger and alienation into the nostalgic sense of loss. However, sometimes the citizens are able to mobilize themselves and their memories to produce Histories A, and sometimes Histories A are able to counterbalance History N to

preserve threatened ways of life and places. Such preservations take place in what I call 'the internarrative zone', where History N is unable to completely anteriorize the threatened place and Histories A are not able to return the place to its original innocence. In this zone, natural habitats become national parks, no longer existing as pristine wilderness, but as a part of the national heritage.

History N: from *kampung* to world city

During the rapid industrialization of the 1960s, the Singapore developmental state faced the obstacle of place-bound communities. In the urban centre in the south, shophouses dominated the cityscape, and in the surrounding suburban areas, there were dense village settlements. In the outlying rural areas, Chinese and Malay *kampung* settlements dotted the landscape, along with farmlands amidst natural surroundings. Resettlement was carried out, and sheer legal force did not give villagers any option. More than 230000 households were resettled between 1961 and 1984 (Wong & Yeh 1985:316). This indicates a substantial dislocation of the population, as can be gauged by rough comparison to the total 472700 households counted in the 1980 census (Department of Statistics 1981). Most were resettled in public housing high-rise apartments built by the Housing and Development Board. By 1999, an estimated 2747000 persons out of a total 3.2 million live in public flats located on 7015 hectares or 10.6% of Singapore's land area (Housing and Development Board 1999:67, 69).

However, public housing is not merely about moving people out of the way for developmental projects or a provision of state welfare. By carefully creating a regulated housing market of different flat-types and redeveloping old housing estates to enhance their market value, the government made resettlement profitable and socialized upwardly mobile aspirations. The downside of the successful housing policy is that a constantly resettling population whose movement is determined by market forces creates the problem of place. Long-standing social networks are displaced and reduced to relationships that depend on maintenance over distances, not rooted in the normative order of everyday interaction in meaningful places. The impermanence of the everyday in commoditized housing ensures that 'community' will be a feeling limited by casual acquaintances and not be allowed to deepen to form place-based communities rich in social interaction. In this context, the nostalgia for *kampung* is more than a daydream of idyllic lifestyle that is used to criticize the stress of contemporary urban life in a market economy (Chua 1995a). The *kampung* nostalgia imagines the self in an indigenous community embedded in an intimate vernacular environment. The recovery of memories of *kampung* life articulates a desire for

an identity marked by the certitude of belonging to a community with spirited bonds and the freedom to interact and grow in a meaningful place.

The significance of *kampung* memories are not lost on state officials, and they often try to incorporate them into History N. *Kampung* memories are neutralized by their anteriorization in History N, as simply nostalgia stripped of its critical edge. Like conventional narratives, History N divides its story into the temporal stages of past, present and future. In Singapore's History N, the past and present are arranged in a highly linear fashion to tell a story of development from a backward state to a modern one. Singapore's past is encapsulated in black-and-white images of *kampung*, such as those found in the National Archives' (1993) *Kampong Days* book, symbolizing colonial backwardness. On the other hand, the colour images of the present cityscape of Singapore are usually contrasted to the *kampung* images, expressing development out of backwardness. Embedded in this narrative sequence of images are two subtexts. The first points to the protagonist: the civil servant as the historical agent who overcomes developmental obstacles. The second postulates a future in linear extrapolation, implying either retrogression or stagnation or progress towards an even better life. Successful narratives are those that pull in and enrapture the audience, calling them to participate in the story imaginatively and to act out the story or the moral of the story in real life. By posing an uncertain but linear future, History N calls on the listener to participate in national development. A third image, a vision of Singapore as a thriving world city with a cosmopolitan quality of life, is used in this respect, dangled as a collective object of desire. Freed from being anchored in the physical present, ephemeral *kampung* memories can therefore be redeployed to service the state's communitarian ideology (Chua 1995b). In this redeployment, the nation is imagined as transcending the coordinates of material space, a communal spirit released from its entrapment in backward 'bodies' of a colonial past and now flowing through the body politic of the nation to prevent its diffusion into global space as the state builds the cosmopolitan world city.

To encourage the flow of *kampung* spirit as a national-communal buffer against globalization, the state began to incorporate elements of the *kampung* memories directly into its planning instruments in the 1990s (Urban Redevelopment Authority 1991, 1999). For example, in the plans for *Punggol 21*, sold by the administration as a model housing estate for the twenty-first century, it is expressed, together with old black-and-white photographs, that Kampong Punggol 'was believed to have existed 200 years ago' and that 'Punggol' means to hurl sticks at fruit trees to bring the fruits down and also a place where fruits and forest produce are sold (Urban Redevelopment Authority 1998:8). This deliberately evokes the idyllic and communal life of a rustic *kampung*. The ethos

of this life is operationalized in the plan as 'Relive The Kampong Spirit', where it is proposed that community facilities such as clubs, libraries, schools, places of worship, parks and fields be clustered to 'foster a strong sense of community spirit' (Urban Redevelopment Authority 1996). In the 2001 Concept Plan for land use in 'a thriving world class city', the Urban Redevelopment Authority (2001) focuses explicitly on encouraging 'a sense of identity' in the physical landscape and 'a sense of rootedness' within the country, with identity conceptualized as 'a diversity of people, cultures, places, buildings and memories'. To realise this, the plan aims to build smaller new towns to make them 'more compact and personal' and to incorporate natural places to give residents 'a sense of identity, history and continuity'. It is in this plan that the government announced that it would keep Pulau Ubin 'rustic for as long as possible' (Urban Redevelopment Authority 2001).

The Singapore Green Plan 2012, the state's latest ten-year environmental blueprint, also exploits *kampung* memories to deepen its theme of moving beyond 'clean and green' to achieving 'environmental sustainability' in the 'global village' (Ministry of the Environment 2002:ii). Beneath a picture of a disorderly *kampung* alleyway with peering unkempt children, captioned 'Singapore at independence in 1965 was vastly different from what it is today', the reader is reminded that the protagonist transformed a dirty and bleak semi-rural landscape into a clean and green city-state through detailed planning (2002:13). Environmental management, the reader is told, complements development, both necessary to the nation's survival. The moral of the story is 'sustainability means survival'. The Green Plan holds out two 'watchwords' for sustainability, 'to conserve' and 'to balance', the first defined as 'wise and judicious stewardship' of environmental resources through 'minimizing wastage and maximizing utility value', and the second as 'striking the right balance' between conservation and human development needs (2002:14). The anteriorization of *kampung* memories in this green rendition of History N privileges the protagonist as the arbiter of conservation-development considerations by the virtue of his past record of ensuring survival by cleaning out *kampungs*.

Histories A: Pulau Ubin, the last *kampung*

As a favourite weekend destination for many Singaporeans, Pulau Ubin does not only return those who had actually lived in *kampungs* to the nostalgic past, but has become the very crucible of memories of *kampung* experience in its own right. Among other guises, History N has arrived at the island as part of the national education programme for school children. One of the guided educational tours provided by Singapore History Consultants to paying schools is

entitled 'Kampong Days: From Village to New Town'. The meaning of the organized trip to the island is placed in an anterior time. Children are told that they are going back half a century to see how life was like in the *kampung* before a protagonist who need not be named conveniently provided the sanitary comforts of modern amenities. In fact, the narrative follows the National Archives book very closely, except that the students now experience *kampung* life in its full three-dimensional colour, humidity and stench.[1] The memories of this experience are therefore moulded from the start by History N. Here, Pulau Ubin is not a place coeval with the present, but a relic to remind future citizens of present achievements in surviving the national trials of development.

In contrast, the Histories A of Pulau Ubin make the a-priori claim to the island as existing in real time, in the present and in its own right. They weave yarns that differ in rhythm, linearity, affection, morality and meaning from History N. The Histories A of Pulau Ubin are part of the larger Histories A of lived places in Singapore. They belong to the wider sea of voices expressing cherished memories of lived places. The *kampung* furnishes a critical rather than a nostalgic image for postcolonial literary figures reflecting on national development. I give two examples here. Arthur Yap's 'location' (2000:4), first published in 1971, employs the *kampung* image to critically reflect on the resettlement programme that kicked into high gear in the late 1960s. The image of 'bicycles arriving / cleaned bicycles departing' from the village speaks of how the developmental state's public housing principles of sanitation and mobility erase personal and communal identities. Yap ends with a refusal to move with the linear narrative of development in the image of a stationary bicycle 'leaning on the grass / neither tired nor cleaned', 'just resting / sufficiently / to make no sense at all'. Alfian Sa'at's *One Fierce Hour* poetically expresses the sentiments of the younger generation of Singaporeans who grew up in the public housing milieu. In 'The Last Kampung' (Alfian 1998:19–20), the employment of *kampung* memories begins in the nostalgic manner, but ends in the imposition of lyrical death on the subject. Alfian concludes the poem, 'On the last evening in the last *kampung* / a mother rocked her baby / in the embryo of its *buaian* [Malay: cradle] / singing it lullabies over and over / for fear the child would forget. / The well has already forgotten. / Its stupefied mouth gapes wide, / as if in the middle of a sentence, / speechless with the memory of a drowned moon.' Here, there is no progress and no future, only a nation that is drowning in the sea of haunting memories.

The Histories A of Pulau Ubin belong to the same formation of collective memories. Nature writer Chua Ee Kiam's *Pulau Ubin: Ours to Treasure* is a photo-narrative of memories of the island. He begins, as in History N, with the claim that Pulau Ubin represents 'what Singapore was like, prior to development and

industrialization' (Chua 2000:13). But this anteriorization of Ubin is an opening exploited by Chua rather than a position within a linear narrative to show the progress of today. It is an opening to a sharing of memories, a dialogue between Chua, Ubin residents and the natural beings on the island. Thus, the pictures in the introduction 'Welcome to Ubin' alternate among photographs of tourists, residents, plants, animals and landscape. For example, in five turns of the pages, one is treated to scenes of idyllic life, close-ups of birds, mangrove roots and animals, abundant fruits and a man enjoying his durian, an abandoned truck being reclaimed by nature and landscape views of Ubin village (Chua 2000:14–25). Here, the narrative is fluid, as though to say to the reader that everything and everyone have a right to the space of the island, and that it is in the bringing of their memories of life on the island to the present interaction which makes the island uniquely Ubin. Chua (2000:24) writes:

> At the jetty, boats wait to bring visitors back to the mainland. I look at the quaint coffee shop of Encik Ali bin Montail and realise that a huge Tamarind tree straddles a granite rock next to his shop and that I had missed it until I tried to look beyond the obvious. As I walk towards the jetty, I pause and stare at the granite rock, for it resembles the profile of a rhinoceros. Like the rhinoceros that is nearly extinct, Pulau Ubin, an island so unlike the mainland, may also be but a memory. Like the rich changing colours of the kaleidoscope, the island has only intense memories for me. The call of Ubin sounds more like a whisper now.

As opposed to the causal relations between past and present in History N, where the contrast between the backwardness of the *kampung* and the modernity of the cityscape is explained by the agency of the protagonist, the relationship between things in Chua's narrative is phenomenological, emerging from being implicated in Chua's stream of consciousness. Thus, it is at the jetty, when Chua is about to leave the island that his memories return to him through the linkages of things and beings sharing a particular space, from a *kampung* coffee shop to its Malay owner, an adjacent tree, the rock underneath, and finally an imaginary rhinoceros symbolizing endangerment, thereby creating the very meaning of Ubin as a place of threatened memories. Unlike History N, the reader is not called to fulfil the next step in the teleology of national development, but to witness a hushed cry of help from an endangered place. The rest of the book is a treasure trove of memories of *kampung* life and natural encounters. Connections can be drawn to Yap's and Alfian's poetry. A photograph of muddied and rusty bicycles standing in front of a Chinese *kampung* house bears out the stillness of Yap's refusal to move (Chua 2000:55). The last photograph in the text is that of an old lady walking along a dirt track carrying a coconut home (2000:129). Her mouth is

open as if she is about to speak, but we do not know what she has to say, like the speechlessness of Alfian's last *kampung*.

Nature Society, the pre-eminent conservationist NGO in Singapore, kept the Ubin conservation issue alive in the 1990s by congealing *kampung* memories into Histories A narratives. The title of the 1995 special edition of its *Nature Watch* magazine, 'Pulau Ubin: Nature in the Balance' (July–September, 1995), belies the recurring memories of *kampung* life expressed in photographs and oral histories between the covers. The narrative begins with an article placing the island in archaeological time, linking the imagination of Pulau Batu Ubin ('granite stone island' in Malay) to prehistoric societies that left four Neolithic stone tools discovered recently. This deep anteriorization of Ubin's past therefore puts the *kampung* image into proper temporal perspective, as the recent present rather than the backward past. Then, the reader is treated to the lives and recollections of 'oldtimers' that made up this recent present. The rest of the magazine features the flora and fauna of the island, educational activities organized by the society at the disused *kampung* school and conservation issues facing Ubin. Its pictorial map of Ubin is a narrative in its own right, comprising inscribed memories of *kampung* landmarks, agricultural activities, animal sightings, florascapes and ecological events that transform the map into an atlas of meaning (Fig. 20.2).

Chua's book and Nature Society's magazine are vivid manifestations of Ubin's Histories A. Most narratives of Histories A, however, are not visible in the public domain because they circulate in the undergrowth of conversations and musings of everyday life. This has led a young conservationist, Tan Peng Ting, to start an internet archive called *Pulau Ubin Stories*, hence creating a virtual space where memories can be shared. In one story, 'Changing with time', the author regrets the sprucing up of a landmark Chinese-style shrine of a German girl, who reportedly fell to her death during the First World War while running away from the British. 'Its upgraded look could now pass off as any shrine…on mainland', the author writes, 'It seems no longer [to] captivate the imagination as it once used to.' The lesson the author draws from this experience is that he or she should not be 'complacent any longer', that it is important to 'take our memories with us in photos and stories and share it with everyone' so as 'to prevent our losses before it is too late' (Monkey [posting name], 'Changing with time', 14 September 2004, http://habitatnews.nus.edu.sg/heritage/ubin/stories/ downloaded 6 May 2005). Here, the sense of collective ownership of the minutest bit of Ubin is very strong. The voice is inclusive in contrast to the exclusive voice of the landscape-changing protagonist of History N. A similar virtual collection has been started by Ria Tan in *Focus on Pulau Ubin*. Through highlights such as 'Pray you will not be a Sentosa [a tourist theme-park island]' and 'I remember with fond memories my…days spent on Ubin…my friends with

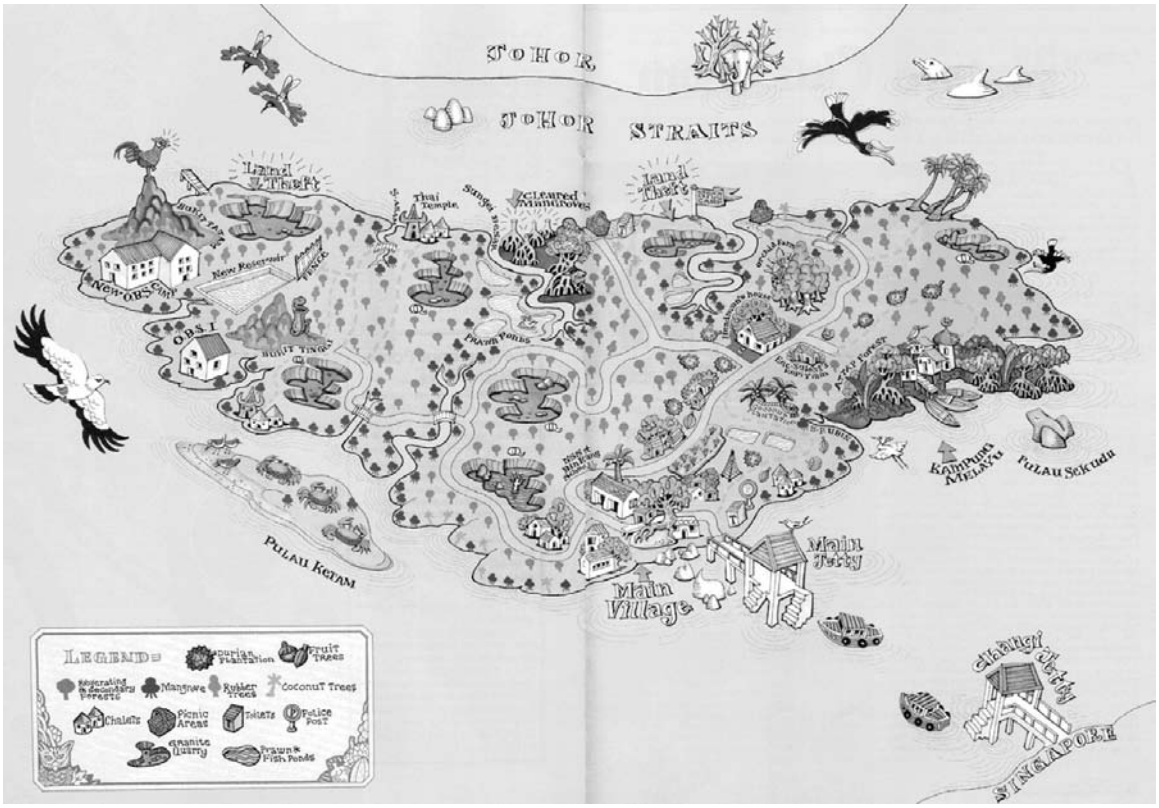

Figure 20.2. Nature Society's map of Pulau Ubin, 1995. (Reprinted with permission from *Nature Watch*, July–September, 1995.)

whom I share these memories are now life-long friends' ('Focus on Ubin survey highlights', January and March 2005, http://www.focusubin.org/ downloaded 6 May 2005), the narrative defeats all linearity and is a cacophony of fragmented memories expressing hope.

I conclude this survey of Ubin Histories A with reference to a poem by Joseph Lai, the botanist who initiated the public campaign to conserve Chek Jawa, entitled 'Like Fireflies' (*EART-H*, http://www.eart-h.com/text/firefly.htm downloaded 6 May 2005). The poem memorializes the occasion when volunteers conducted a salvage survey of Chek Jawa on the eve of its imminent destruction. A volunteer himself, Lai wrote it in 'a moment of despair and uncertainty'. The poem describes the flickering torchlights of the volunteers as symbolizing the hope in their hearts. The mood appears to be initially one of consolation, expressing a belief that memories will prevent the tragedy of a complete loss. But again linearity is absent. Lai suffers a mood swing: 'We met like tiny glass pieces, / broken and shaken in her kaleidoscope / to sparkle that once / even as the nation slept.' The dreamy metonymy of fireflies, starlight, torchlight and hope built up through the poem is shattered by referring to the powerless volunteers as broken glass pieces, who can do nothing but refract the brilliance of Chek Jawa, even though none may care to see. Lai's letter to his son, entitled 'Chek Jawa Days', is also written in a similar mood. Published in the July–September 2001 issue of *Nature Watch*, Lai collects the memories of the intimate times he spent with his son at Chek Jawa and imparts them to him. A sense of powerlessness is expressed, for the father regrets that he is unable to pass down a rightful inheritance to his son, who only inherits memories.

Internarrative zone: Chek Jawa at Pulau Ubin as a national park

Pulau Ubin and Chek Jawa exist today not because of a compromise between the developmental state and conservationists, but because History N and Histories A are locked in a tense balance to create an internarrative zone. Put simply, civil servants of the developmental state cannot subscribe to the ecological rationality adhered to by conservationists and have no incentive internal to their policy deliberations to make a compromise detrimental to what they believe to be in the national interest. However, the state relies on the consent of the people for political legitimacy, for the continuation of the right to rule. History N is complicit in the socialization of this consent, but interest groups and concerned citizens can mobilize Histories A to put this consent into question over particular policies. Therefore, purely scientific ecological arguments are necessary, but not sufficient to ensure conservation. The

alternatively articulated memories of the multitude, along with all the affections and irrationalities involved, contribute to the sufficient factor. It is only after the Histories A have been deployed to counterbalance History N that the rhetoric of compromise emerges. One therefore finds the blending of History N and Histories A narratives in the internarrative zone, with the *kampung* memories in play as both anteriorized nostalgic pasts and valid meaningful presents.

Chua Ee Kiam's (2002) book celebrating the Chek Jawa reprieve is such a blend. The book resides in the internarrative zone and claims Chek Jawa to be a national park, even though it is not officially established as such. The Minister for National Development, Mah Bow Tan, who personally visited the place, wrote the foreword. In the first paragraph, Mah wrote that 'conservation has to be balanced with other competing development needs' and it was 'the views of experts' that led the government to 'put off reclamation' (Chua 2002:11). This speaks of a compromise, but clearly indicates the voice of History N's protagonist, the agent of national development who decides. Significantly, Mah went on to say that 'Chek Jawa is special not just for its biodiversity', but because 'people from diverse backgrounds' contributed to its reprieve. He continues, 'This book on Chek Jawa is as much a showcase of the enthusiasm of the experts and volunteers who have formed a deep association with this unique area, as it is of the rich biodiversity of Chek Jawa itself', thereby explicitly recognizing the deep memories of Histories A that bind people to places. There is no anteriorization of Chek Jawa in linear time in the foreword, no call to action on behalf of national development, only a suggestion to engross oneself in 'a documented memory' (Chua 2002:15).

Chua's own narrative is an equally delicate blend. The intimate memories of Histories A abound in the pages. The *kampung* houses demolished in preparation for land reclamation are memorialized in a series of photographs. The Histories A critique of the modern landscape is reiterated, 'Raised in front of the goggle box and settled in our cosy shopping malls where nature is only part of the décor, we become indifferent to the conditions of nature. Our mindset mirrors this alienation with exactitude.…We need to immerse ourselves with the colours, scents and sounds of nature. We seek to touch the many textures and perhaps taste the luscious fruits of the wild.' A few paragraphs later, Chua writes with more than a nod to History N, 'A balance must be found to satisfy Singaporeans' growing awareness for the need for nature appreciation and the relentless zeal for endless developments. A scientific and rational approach is necessary when approaching the authorities on issues of nature conservation' (Chua 2002:80). Chua also suggests that 'typical Malay and Chinese' *kampung* houses be resurrected on the Chek Jawa site to 'help our children to learn of the cultural heritage not seen on mainland Singapore', because they 'lend to further exploration of one's history

and roots' (Chua 2002:84). This dovetails with the anteriorization of *kampung* memories in History N, allowing Chek Jawa to become a museum for nostalgia and national education.

Conclusion

One of the key conclusions of the 1982 World Congress on National Parks states that 'non-governmental organizations need to be strengthened and encouraged in their lobbying efforts, and the general public needs to be mobilized in support of the ethical, aesthetic, and spiritual values of protected areas', so as 'to ensure that the intangible, non-fiscal values are properly considered by decision-makers' (Miller 1984:760). Looking at the exemplary developmental state in Singapore, I have shown that the nation-building project of postcolonial states has already mobilized collective ethical, aesthetic and spiritual values in the dominant history of national development. In such a situation, protected areas are always subordinated to the demands of national progress. I have also shown that in order for conservationists to maintain the protected status of these areas, they need to mobilize the general public in support of the values in alternative narratives to balance the dominant history. It is in the internarrative zone balanced between dominant history and alternative narratives that protected areas persist as national parks. Chek Jawa has become a national park in the making because Singaporeans have treated it as an integral part of an island that is a repository of *kampung* memories. It is precisely because Ubin lies at the edge of national imagination and the modern landscape shaped by it that the island has emerged as the crucible of cherished memories. Chek Jawa and Ubin owe their continuing existence to conservationists for crystallizing these cherished memories into alternative narratives of affective belonging and being in a meaningful place to balance the dominant history of *kampung* memories co-opted as nostalgic justification for rapid developmentalism.

There is no doubt that the Ubin alternative narratives are middle-class articulations. Only the class that can afford such leisurely preoccupations can have their voices heard in middle-class Singapore. But the synergy between middle-class environmental activism and people defending their ways of life and habitats should not be underestimated. Neither should activists be dismissed because they do not have as much material stake in the issue as the latter (Goh 2001; Chapter 12). Though they may not live there, to many Singaporeans, Pulau Ubin is a deeply meaningful part of their way of life. And if the provision of human life is more than material sustenance and physical survival, then Ubin is also very much a part of their habitat, well within the range of their cultural forage.

This implication comes with a caveat. I have not taken the position of local communities resident on Ubin into account in my analysis because resettlement had reduced these communities to a shadow. But for the over 100 residents remaining on the island, the change in the island's conservation status meant that they may not be able to claim resettlement compensation for their assets and have to remain as ecotourist props to provide for a more authentic *kampung* feel as genuine villagers (*Straits Times* 2002b). This fits into the conservationists' advocacy to make Ubin and other national parks natural-cum-cultural heritage sites, complete with preserved *kampung* settlements, authentic villagers and nostalgic tourist dollars as buffers against bulldozers. But in the momentous tussle between the histories and interests of the state and conservationists, the choices and agencies of local communities, no matter how reduced, are ignored. Those who prefer to continue their old way of life are often monitored by conservationists for poaching and farming practices and by state health agencies for poultry rearing, suggesting that there may be inherent conflicts of interest in community participation approaches to conservation (see Chapter 15). It also suggests that local communities are usually the losers in the state-conservationist compact over national parks (Chapter 14), their memories and resources coveted and co-opted by the state and conservationists, unless they can organize themselves to articulate their own alternative histories to defend their interests (Chapters 16 and 18).

In any case, the issue may be moot for the case of Ubin. While conservationists continue their harried gathering of *kampung* memories to produce alternative narratives, the developmental state makes sure that the *kampung* memories are anteriorized as much as possible. Thus, despite the calls to preserve *kampung* settlements within nature areas, the authorities are content to mark national parks as 'reserves' in two complementary senses: they are developmental reserves of natural non-human resources that may be degazetted from national park status and natural reserves devoid of human habitation and primed for developmental clearing. No *kampung* houses and their residents have ever been allowed to stay to form a part of Singapore's national parks, none will ever be resurrected at Chek Jawa. It is telling that the sole building that survived the initial destruction is a colonial cottage built in the 1920s. It is to become the visitor centre of the Chek Jawa protected area.

Summary

Contestations over natural habitats in postcolonial countries do not only involve the competing interests of ecological conservation, local communities and economic development, but also the cultural process of

narrating competing histories using collective memories of meaningful places. The dominant history of postcolonial nation building co-opts the memories to justify the exploitation of natural habitats for national development. It is by counterbalancing national history with alternative histories that nature areas are conserved as national parks. The case of Chek Jawa, a coastal habitat on Pulau Ubin lying at the edge of modern Singapore, is exemplary because politically toothless conservationists reversed its imminent destruction by a resolutely developmental state. In Singapore, memories of *kampung* village life in natural settings are nostalgic about an extinct way of life and critical of the present alienation of communities in the urban landscape. Pulau Ubin, seen as the last *kampung* in Singapore, is a crucible of such memories. The linear national history articulated by the developmental state co-opts the nostalgia to justify economic development as progress, while the alternative histories articulated by conservationists speak of affective *kampung* belonging to criticize development. In the balance of national history and alternative histories, Chek Jawa was saved and became a national park in the making.

End notes

1. This information is based on a copy of the handout accompanying the tour that a teacher kindly gave me in November 2004. I approached Singapore History Consultants to obtain further information and their permission to follow one of their tours and use their materials, but I was ignored. I have therefore not taken the liberty to quote from the handout but have merely summarized the general narrative contained therein, which, as the reader can see, is very much an integral part of the public domain.

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21

Integrating conservation and community participation in protected-area development in Brunei Darussalam

AZMAN AHMAD

Introduction

The importance of local community participation has never been more underscored than in protected-area development. The World Conservation Strategy acknowledged the need to involve local communities in rural development in terms of labour, funds, land and materials, by linking protected-area management and development with the economic activities of local communities (IUCN 1980). It recommended that local communities should be able to share the benefits from recreation and tourism, both directly and indirectly, through the provision of public services such as roads, water supply and health facilities.

Concurrently, the World Tourism Organization (WTO) and the United Nations Environment Programme (UNEP) voiced similar concerns through a joint declaration on tourism and environment drawn up in 1983 (WTO & UNEP 1992). Both organizations encouraged more appropriate tourism development in national parks and protected areas by addressing the ways and means of involving local people living in and around protected areas so that they may obtain increased social and economic benefits from tourism. The World Tourism Organization and the United Nations Environment Programme further developed guidelines in developing national parks and protected areas for

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tourism, which state that in identifying their primary beneficiaries, the local people 'should have the highest priority' (1992:23).

The Fourth World Congress on National Parks and Protected Areas also adopted the need to include local people in park planning and management (McNeely 1992). It is based on the argument that local people have long-standing relationships with protected areas expressed in their cultural identity, spirituality and subsistence practices which assist towards conserving cultural and biological diversity.

In addition, a survey by Giongo and Bosco-Nizeye (1997) on protected areas reveals that 31% of protected areas in developing countries and 64% in developed countries have some form of public involvement. This indicates the low level of participation of the local people in protected-area development programmes in developing nations, assuming that the greater the magnitude of participation, the more beneficial it would be for the public. When public participation in development decisions is insufficient, the decisions may not reflect adequately the experience and wishes of the people affected, and the benefits of the programme may therefore be less than anticipated (IUCN 1980).

It is thus the focus of this chapter to examine the degree of participation of local communities in protected-area conservation and management, with a special focus on ecotourism aspects, based on in-depth interviews with the indigenous Iban and Dusun communities residing at or around selected protected areas in Brunei Darussalam, namely the Ulu Temburong National Park and Tasek Merimbun Heritage Park. This is to establish whether there is any form of local participation in protected-area development, and if so, whether their involvement in protected-area development secure benefits for or support from the local people, or whether the lack of involvement bring about disadvantages to the local people, and in turn, leads to opposition or conflicts.

Importance of participation

The rationale for the involvement and consultation of local communities in ecotourism planning, decision-making and management is based on political, economic, social and environmental considerations.

Political considerations

In the political sense, it is vital to encourage local participation in ecotourism development, as it enlists confidence, trust and support of the people, which can foster better planning and decision-making (Drake 1991). Furthermore, this will legitimize decision-making processes by incorporating local

inputs and thereby avoiding future conflicts between local residents and other stakeholders (Drake 1991). It is also argued that public participation ensures smooth and prompt implementation by generating understanding and accord, and provides additional data for planners and policy-makers (IUCN 1980).

Economic considerations

Virtually all protected areas created for tourism purposes have underlying economic motivations. The World Tourism Organization and the United Nations Environment Programme (1992) suggest that one of the economic considerations in involving local communities is the belief that those living closest to protected areas are largely characterized by low incomes with few viable economic options. Thus, ecotourism provides a valid alternative to encroachment on resources in the protected areas. A central economic argument is that financial costs incurred can be shared by using local resources through contributions of labour, funds, land and material (Drake 1991), or by making local community organizations as concessionaires of tourism services, such as boat excursions, guided hiking or birdwatching, thus reducing burdens on the government as the financing mechanism (WTO & UNEP 1992).

Social considerations

From a social perspective, the involvement of local people in ecotourism educates the public in the importance and problems of conservation and development (Drake 1991), while educating policy-makers, planners and managers in the concerns and needs of the people (IUCN 1980). Further, it improves the public's understanding of management objectives (IUCN 1980); it also develops talent and skill for management and administration in the rural community (IUCN 1980). Local participation is important in order to protect cultural norms and avoid negative impacts on local culture (Drake 1991). Moreover, as hosts, the reception of visitors will affect the latter's experiences and perceptions.

Environmental considerations

There are a number of environmental concerns that address the need for local participation in ecotourism. Fundamentally, as long-time residents, local communities possess a notable practical and ancestral knowledge of the natural environment useful for effective nature guides, wardens and conservationists (WTO & UNEP 1992). Besides that, their involvement will help

to ensure sustainable use of natural resources and avoid negative impacts on ecological conditions (Boo 1991).

Brunei Darussalam's indigenous communities and national parks

Brunei Darussalam has a population of 357 800 people with a racial mix dominated by the indigenous communities of Malay, Kedayan, Tutong, Belait, Bisaya, Dusun and Murut, which account for nearly 70% of the country's population. There also exists an 'other indigenous' grouping, as stated in the official population census, namely the Iban, Dayak and Kelabit, which constitutes 6% of the whole population.

Dusun are variously called Bukit, Bisaya and upstream Tutong people, while they prefer to identify themselves as *Sang Jati* or *Sang Kedayan*. The term *dusun* in Malay refers to an 'orchard' or a 'distant village'. Dusun in Sabah, Malaysia, though similar by name, are linguistically and culturally different from Dusun in Brunei Darussalam. The Sabah Dusun are now commonly referred to as Kadazan. The Dusun population is not recorded officially, but it was estimated to be more than 1000 people in the 1920s and this could have risen to 20 000 people currently. The Dusun are constitutionally native to Brunei Darussalam.

The Iban, also known as the Sea Dayaks, have migrated to Brunei Darussalam in search of work. They came from Sarawak, where they form the largest ethnic community in the Malaysian state. Sarawak Iban are believed to have come from the Kapuas River Basin in Kalimantan, Indonesia, and moved into Sarawak in the early nineteenth century. Many Iban immigrants, including those entering the country illegally, did not return to their homeland, and instead chose to remain in Brunei Darussalam, and thus obtained their Bruneian citizenship. The population of Iban in Brunei Darussalam began from a modest 235 people in 1921, growing to 3900 people in 1960. Though there are also no official figures for the Iban population in the country, it is believed that there could be up to 15 000 Iban residing in Brunei Darussalam at present.

Approximately 4690 square kilometres or 81% of Brunei Darussalam has maintained its forest cover, and nearly 73% of this comprised natural forest. There is no specific legislation for national parks in Brunei Darussalam. The Forest Act of 1934 and the Wildlife Protection Act of 1978 have provided for the establishment of forest reserves and wildlife sanctuaries. A national park is a relatively new concept in Brunei Darussalam. Ulu Temburong National Park and Tasek Merimbun Heritage Park are the only two protected areas that have been recognized as Brunei Darussalam's national parks. Both national parks

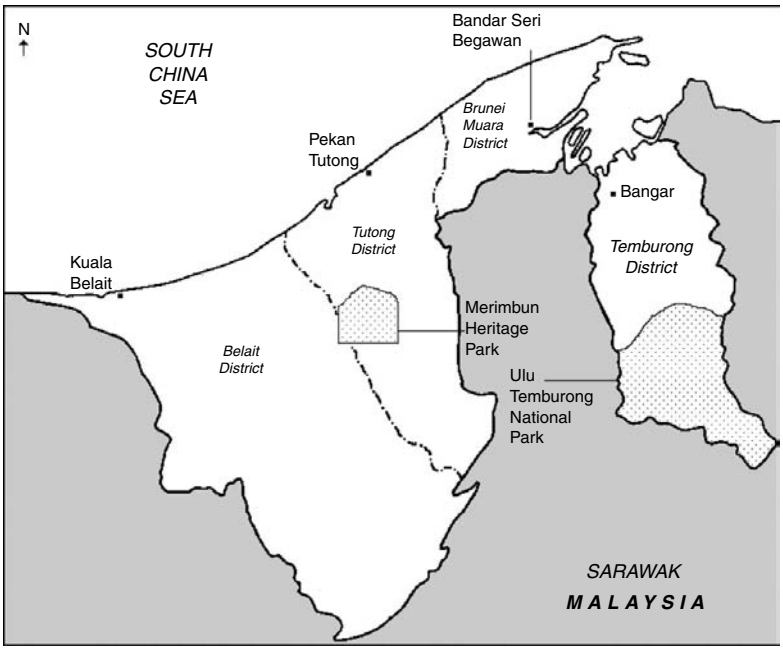

Figure 21.1. National Parks of Brunei Darussalam.

are located in the interior regions of the country (Fig. 21.1). Altogether, Ulu Temburong National Park and Tasek Merimbun Heritage Park contribute to nearly one-tenth of the land area of Brunei Darussalam.

Ulu Temburong National Park

Ulu Temburong National Park forms the southern part of the Temburong District. The Temburong District is an enclave separated from the rest of Brunei Darussalam by the Sarawak territory of Limbang. Temburong District encompasses an area of 1304 square kilometres with around 9300 inhabitants, mainly comprising Malay, Iban and Murut communities. The whole area of the park falls under the Batu Apoi Forest Reserve, which was established earlier in 1957, and has since been under the jurisdiction of the Brunei Forestry Department. It was, however, only in 1991 that the Batu Apoi Forest Reserve was officially declared as the site of the country's first national park, namely Ulu Temburong National Park. Vegetation in the area ranges from lowland mixed dipterocarp forests to mountain forests.

Under Brunei Darussalam's National Development Plans, the park has been allocated about B$15 million for the construction of basic reception installations,

such as nature trails, wooden walkways, forest canopy walkway, tree-houses, observation points, camping sites, information centre, library, prayer hall, park office, exhibition hall and audio-visual room. There is no human settlement within the national park because of the park's remote location and rugged terrain. The nearest village to the park is Kampong Batang Duri, where the residents are Iban, which is roughly 11 kilometres from the perimeter of the park. Local people residing near the park have traditionally been using the river leading to the park, and carrying out traditional hunting, gathering and fishing activities, which have so far exercised no significant impact on the wildlife and plant resources in the park.

Tasek Merimbun Heritage Park

Tasek Merimbun Heritage Park is found in the Tutong District, sandwiched between the main district, Brunei-Muara, and Kuala Belait, the oil-producing district. The Tutong District covers an area of 1166 square kilometres, with approximately 35 200 people made up of different indigenous communities, such as the Tutong, Kedayan, Dusun and Iban ethnic groups. With an area of 7720 hectares, the national park contains the biggest natural freshwater swamp in the country. Much of the area of the park is state land, with the Brunei Museums Department as the main authority responsible for managing it. Only a small portion is private land, where the village of Kampong Merimbun is sited, that is, at the northern tip of the park. The park comprises two freshwater lakes, approximately 1000 hectares, that are surrounded by large areas of dipterocarp, freshwater and peat-swamp forests. Tasek Merimbun became a national park in 1996 adopting a new name called Tasek Merimbun Heritage Park, in order to honour the proclamation made by the Association of Southeast Asian Nations (ASEAN) Declaration on Heritage Parks and Reserves in 1984. The government of Brunei Darussalam injected B$4.5 million for the construction of new facilities at Tasek Merimbun Heritage Park, comprising a multipurpose hall, exhibition hall, laboratory and hostel.

The management of Tasek Merimbun Heritage Park appears to be rather complicated. Although it is a national park, it does not come under the jurisdiction of the Brunei Forestry Department, whose establishment of forest reserves is provided in the Forest Act of 1934. The Brunei Museums Department's research undertakings from September 1983 to August 1984 and Tasek Merimbun's designation as an ASEAN Heritage Site in November 1984 have given the Brunei Museums Department a stake in the management of the area. Thus, as a national park, the Brunei Museums Department is the authority most responsible for the administration of Tasek Merimbun Heritage Park, while

Tutong District Office, under whose jurisdiction the area falls, is still liable for facilities erected prior to the Brunei Museums Department's involvement in the early 1980s. As a national park, the area and boundaries of Tasek Merimbun Heritage Park have not been precisely defined, nor have they been gazetted. This has further implications for the management of the national park in terms of enforcement of park regulations, and monitoring and surveillance activities of its ecological resources and park visitors.

Local community participation in Brunei Darussalam

The participation of local communities in development decisions in Brunei Darussalam is different from other developing nations because of the unique political structure present in the monarchical state. As pointed out by Ali, 'there is no democracy in Brunei in the western sense' (1996:1), but the traditional system of peoples' representation through *ketua kampung* (village chief), which is largely acceptable among the majority of the Bruneian people, has provided the necessary participatory politics, respect for political rights and political stability in the sultanate (Ali 1996). There also exists a system of grassroots representation in Brunei Darussalam through Consultative Councils, which are at village or *mukim* (subdistrict or a group of villages) levels. These Consultative Councils, composed of *ketua kampung*, *penghulu mukim* (head of a subdistrict or a group of villages) and advisers, are designed to be accessible to ordinary citizens to present their grievances and to obtain redress.

In relation to development decisions in these protected areas, at the initial planning stage of tourism at Ulu Temburong National Park and Tasek Merimbun Heritage Park, both Iban and Dusun communities acknowledged that they were not involved in decision-making tasks, such as identifying problems, formulating alternatives, planning activities and allocating resources at the parks. The authorities of both parks, however, asserted that local residents' needs and expectations were addressed and that they were consulted by the government on the development of the parks. However, the absence of or limited local communities' involvement through decision-making in the initial ecotourism development did not appear to bother many of the informants, as they regarded such responsibilities as resting with the government. The government is responsible to ensure that its planning and decision-making process takes into account the needs and concerns of its citizens, and, in that regard, the population generally expects that they will benefit socially and economically from the development processes. In addition, the lack of local involvement in decision-making did not hinder local communities from giving their support to ecotourism development at the national parks. The Iban and

Dusun argued that without such development, they would not be able to reap the variety of potential benefits, for example, through employment and business opportunities.

The approach of local involvement evident in the case of protected-area development at Ulu Temburong National Park and Tasek Merimbun Heritage Park can be said to be one of passive participation. In such instances, local communities were merely informed by the government about the development programmes, through the *ketua kampung* or *penghulu mukim*, without consideration of the communities' responses or reactions. In such a situation, local people participated by being told what is going to happen or what had already happened. It was a unilateral process where peoples' responses were not taken into account and information being shared belonged to external professionals, which in this case refer to government officials and those involved in the planning process, such as trained consultants and park developers. Ideally, local community involvement in protected-area development should follow a 'participatory approach' (Brandon 1993) or a 'community development' approach (Horwich *et al*. 1993), which empowers people through decision-making and control of local resources. Rather, to use Brandon's (1993) term, the local communities in Brunei Darussalam were involved in some form of 'beneficiary approach', which saw people receiving local benefits but not participating in decision-making. Though a 'participatory approach' is desirable, in reality, there are limits or challenges to the practical implementation of local involvement in ecotourism activities, such as the structure of decision-making and resource allocation in the development planning processes. As earlier pointed out, the concept of participatory politics in Brunei Darussalam is uncommon; hence, the nature and extent of local involvement in protected-area development is bound by the system of administration and political organization in the country.

Despite its centralized structure, the government of Brunei Darussalam is encouraging people's participation in the development process and conserving natural resources and the environment, and this effort has sifted down into protected-area development. The Minister for Industries and Primary Resources has announced during an exploratory visit to the Ulu Temburong National Park in September 1999 that the government will have full control of the national park. Importantly, the minister reiterates that local people are welcome to participate in the development and running of the park (Ibrahim 1999). As a result, one of the Village Consultative Councils in the Tutong District, namely Kampong Bukit Udal Village Consultative Council, has since 1999 developed an ecotourism programme that covers activities to support the ecotourism development at Tasek Merimbun Heritage Park. This includes guided tours and night walks, and watching birds and mammals in the rainforest of Tasek Merimbun

Heritage Park. The Consultative Council also promotes Dusun cultural heritage through traditional dances and musical performances, handicraft works, medicinal plants, ethnic foods and native fruits, and through their interaction with researchers and visitors. They also offer home-stay programmes to tourists and those interested in staying in a typical Dusun household and experiencing the daily activities of the Dusun community, such as collecting non-timber forest products and harvesting paddy during the harvesting season.

The government also calls for the participation of the private sector in contributing viable ideas in order to enhance the attraction of the national parks. It is believed that the private-sector would help 'accelerate the growth of ecotourism and its supporting industries' (Ibrahim 1999:3). Fowkes and Fowkes (1991) argue that private-sector involvement is necessary in order to prevent national parks from becoming a drain on national funds. In providing tourist accommodation, the government built chalets at Ulu Temburong National Park, which have now been leased out and are taken care of by local businesses. Such an initial step coincides with the framework of a private-sector role, as developed by Fowkes and Fowkes (1991), who consider the leasing, management and maintenance of buildings used for tourist purposes as an appropriate and desirable strategy.

Local communities have grown to realize the potential of benefiting from tourism through direct involvement in the development of the parks. More recently, in the case of Tasek Merimbun Heritage Park, Dusun communities gathered to improve the conditions of the park in order to facilitate the conservation of the park's natural environment (Meiji 2006). Local communities removed the old wooden bridge across the lake of Tasek Merimbun Heritage Park as it was deemed unsafe for public use after having served its purpose for more than 20 years. The removal of the damaged and outdated bridge allowed and encouraged more members of the local community to proactively participate in and benefit from integrated conservation-development activities, such as renting out canoes and kayaks or traditional boats for tourists and visitors to enjoy and to appreciate nature by rowing around the lake. These activities would have minimal environmental impact since they do not produce fuel and noise pollution and thus are in harmony with the tranquillity of the park. New constructions around or across the lakes of the park should be sensitive to the surrounding as they could pose an ugly disruption to the beauty and serenity of Tasek Merimbun Heritage Park's natural setting. The Brunei Museums Department, as the manager of the park, is incorporating the concerns of local communities in its decision-making through consultations with the latter, in order to strike a balanced and harmonious approach in any development that the department considers to be in the best interests of the local community. This is

also essential to the development of a positive relationship between the park's authority and conservation management, the local community and the tourism industry.

As a result of the conservation of the forest areas coupled with tourism activities in the national parks, local communities have been found to benefit economically, socially and culturally. The Iban and Dusun have gained employment opportunities in tourism, education and research, and have been given opportunities in the management of these protected areas as guides, boat operators, labourers, maintenance workers, tour operators, park rangers, research assistants and craft workers. They have also ventured into businesses compatible with the tourism industry's requirements, such as transportation, food and souvenir sales. Local communities are also allowed access to natural resources for the purpose of obtaining plant materials for making souvenirs and the construction of traditional houses at the parks, and for selling local fruits and vegetables to visitors.

From a social point of view, the communities have received improved infrastructure and access to amenities through the provisions of roads, waste collection services, transport and accommodation. In addition, they have benefited from the leisure and recreational opportunities, as they too have access to the tourist facilities at the parks. Heightened social activities in the area were also seen as a positive outcome of tourism development at the parks, as these provided a source of personal and community enjoyment and entertainment, by helping to overcome village remoteness and quietness. Culturally, Iban and Dusun gained from the revitalization of their traditional practices, such as weaving or handcrafting, construction of traditional houses, and the production of traditional games, musical instruments, dances, songs and food. Finally, the rural communities are able to share their customs and knowledge with tourists and visitors through performances of indigenous culture, such as songs, dances, martial arts, and the teaching of craft skill and knowledge on medicinal and poisonous plants, omens, in making traps and as traditional healers.

On the other hand, the indigenous communities also expressed their displeasure over the disadvantages encountered, such as the low level of tourism at the parks, which in some instances made it difficult to sustain their business operations. They also experienced agricultural losses due to the restricted use of the forest reserve as farming sites, the relocation of some of their agricultural areas, and the damage to their farm crops by wildlife from the parks. One Dusun family at Tasek Merimbun Heritage Park recounted their land being acquired, but they were compensated with replacement land. Some villagers also complained about the inadequate recreational facilities, which are also

dilapidated and deemed to be unsafe, while others considered the amenities provided to be in an unsatisfactory condition, with safety and water problems cited. Due to the multiple users of the public roads leading to the parks, these roads have become damaged on some occasions and this can affect visitation to the park, and thus the local businesses. The shortage of park staff and waste disposal facilities has encouraged visitors and tourists to litter indiscriminately in the national parks, which brought discontent to the local villagers, as this upset the natural landscape of the areas. The presence of visitors and tourists to the parks may not be liked by the villagers, especially those that brought vandalism and depreciative behaviour by destroying park facilities, public and community amenities, and disturbing historical sites.

It is clear from the above that the Iban and Dusun residents experienced positive and negative transformations in their respective villages and communities. Importantly, it highlights that little involvement in decision-making process does not necessarily mean local communities will not obtain any economic, social and cultural benefits. In spite of the restricted involvement of local communities in decision-making processes and the disadvantages accrued, disagreements among local communities, park authorities and other relevant stakeholders have not taken place. Instead, local communities generally reacted favourably to the presence of tourists and visitors in the parks and the development activities taking place in the protected areas. However, it must be noted that local involvement should not just imply the hiring of local people and businesses in the protected areas' activities; essentially it refers to the participation of local people in decision-making, such as on issues relating to the ecotourism project, which begins from planning to implementation. This is due to the fact that it is possible for local communities to have lost or missed out on certain benefits as a result of their lack of participation, although they may have already gained some. In other words, the study concludes that putting political constraints aside, ecotourism development at Brunei Darussalam's protected areas will be more meaningful and sustainable if local people are increasingly involved in the planning and implementation processes, as this will cultivate increased responsibility for local people to control their own destiny.

Therefore, the participation of local people in decision-making in ecotourism initiatives in protected areas is supported and preferred. The study agrees with the suggestion by Craik (1995) that a blueprint for tourism development can contribute positively to the liveability of the host communities when it recognizes the needs and aspirations of those communities. Local participation reflects local support, which is vital for the long-term success of ecotourism development in protected areas.

Conclusion

Drake (1991:132) states that 'local participation is a necessary component of sustainable development generally … and ecotourism specifically'. There are political, economic, social and environmental considerations underlying the need to encourage participation and consultation of local communities in the development of protected areas, including in ecotourism planning, decision-making and management. Exclusion of local residents in the development decision process could result in failing to obtain positive transformation of the socioeconomic conditions of the community, and might create friction between the various stakeholders of the protected areas. In the case of Brunei Darussalam's Ulu Temburong National Park and Tasek Merimbun Heritage Park, it was found that:

- there was limited participation of local communities in the decision-making process of the development of protected areas, in view of the centralized style of bureaucratic decision- and policy-making in Brunei Darussalam;
- the restricted involvement in decision-making by the Iban and Dusun residents on development at the national parks, however, does not inevitably lead to a lack of local benefits attained or a negative response to such process by the residents; and
- the Iban and Dusun residents also recognize some disadvantages, which may not necessarily lead to opposition to subsequent ecotourism development, and which have not dampened their support for tourism development at the national parks.

Summary

Tourism is still very much in the development stage in Brunei Darussalam, and local communities residing at its national parks are still discovering ways to participate in the development. Ecotourism development in Brunei Darussalam's national parks has been invested with large amounts of capital by the government, which resulted in most decision-making being done outside the host communities. But in spite of limited local involvement in decision-making in ecotourism management and development at Brunei Darussalam's national parks, Iban and Dusun communities studied were not entirely disadvantaged. Local Iban and Dusun residents gained considerable benefits and they maintained their continual support of the parks' development. In the long term, for benefits to be sustained, there needs to be continual support from the government and tourism industry. There is also a need to take

a balanced and harmonious approach to development that considers the divergent needs, interests and potentials of local communities. Effective community consultation is essential to the development of a positive relationship among the tourism industry, park authority and local communities.

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22

Conclusion to Part II

GREG ACCIAIOLI AND MARIBETH ERB

The original title of the workshop from which these chapters were drawn was 'Conservation for/by whom: Social Controversies & Cultural Contestations regarding National Parks and Reserves in the Malay Archipelago'. That main title was meant to interrogate not only issues of allocating agency – by whom – in the project of conservation in this region, but also issues in evaluating the hierarchy of beneficiaries – for whom – of conservation initiatives. It thus situated this project in the larger re-evaluation of environmental justice being carried out by academics, government officials and, of increasing importance, non-governmental organization (NGO) activists (Zerner 2000). As Lynch and Harwell (2002) point out, central to the project of creating a new paradigm of environmental justice is the recognition of community-based property rights, often (though not universally) defined by local custom or *adat*. Protected areas provide not only a conceptual space in which to think through these issues, as suggested by Afiff and Lowe in Chapter 12, but also a practical field in which the issues of resource rights are being daily negotiated, sometimes violently. In these contexts such terms as 'collaboration' and 'participation' now define the parameters of expectation guiding the conduct of these practical negotiations.

The chapters of this part both document the complexities and failures of collaboration in designing and managing protected areas and present parameters for envisioning possible changes that can raise the currently limited status of participation by local communities located in and around such areas to a more collaborative level (chapter 13). The realization of such changes might

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allow communities involvement in planning, rather than simply assenting to and carrying out conservation blueprints formulated from outside.

Realizing such involvement requires taking into account forces operating on global, national and several levels of local scale. Conservation imperatives – indeed, the very 'logic of conservation' – as currently framed have largely been seen as emanating from the global North, and as imposed by such transnational conservation organisations as The Nature Conservancy, World Wide Fund for Nature, Conservation International and others in their work co-managing protected areas in association with the governments of the region. Many aspects of these imperatives have now been written into national laws and ministerial directives, as carried into effect by the various ministries of forestry, usually the superordinate agency in which departments concerned with parks and reserves are located, of the nation-states of the region. The necessity for zonation of national parks written into Indonesian law is only one such example of the influence of global models upon national frameworks.

However, assessing the impacts of national governments upon local communities in the region requires considering not only national legal frameworks, but also political structures and conditions that operate across various levels of governance. Such considerations point to the contextual complexity of developing truly collaborative arrangements, yet they also highlight possibilities of convergence and commonality. As Majors emphasizes in Chapter 17, there is a need to find a 'middle ground', a space of compromise in which all stakeholders – transnational, governmental, local – will be able to stake their claims, but in which they must also be willing to make significant concessions. Such concessions will be tough: conservationists may need to allow some species extinctions; government officials may need to forego some revenue needed desperately to fund developments in their districts; local communities may have to accept the necessity of some marine no-take areas or sylvan core zones denying access in perpetuity. However, without these compromises no working arrangements that can pragmatically yield sustained and sustainable results acceptable to all parties will be put into practice in regard to both biodiversity conservation and livelihood maintenance and enhancement.

Participants do not need to possess exactly the same repertoires of cultural knowledge in order to engage productively in a common system of social interaction. All that is needed is sufficient overlap in perceptions of participation so that participants can feel that others in the system will act in ways predictable enough to ensure possible achievement of their own goals (Wallace 1961). Such an understanding is crucial to evaluating the possibility of constructive interaction in the social systems centred around the political economy of protected areas. The conservation imperative, at least in some

instances, can be realized without the modernist 'conservation awareness' from the North having entirely to replace local paradigms of knowledge. Sacred groves need not entirely be displaced by core zones. However, ways of cooperating to preserve such areas, however perceived, do require some accommodation of divergent perspectives.

Such accommodations need not require major paradigm changes, but they do depend on the will to construct working agreements that require mutual concessions to balance conservation imperatives with the construction of both sustainable socioeconomic livelihoods and vibrant cultural identities. As so many of the chapters in this part emphasize, the politics of protected areas are part of the larger politics of global–local interactions mediated by national legal frameworks, where the art of the possible consists in constructing and altering constantly shifting balances where each party needs to accommodate, and to some extent incorporate, the paradigmatic views of the others.

Yet, many questions remain. What is worth reflecting on, in conclusion, are the questions of both collaboration and the development of a conservation awareness, as opposed to just 'knowledge' about the 'environment'. Do indigenous peoples in their deep knowledge of local environments traditionally develop a sense of 'conservation'? Some of the authors in this part have interrogated the assertion that the development of a modern 'conservation awareness' on the part of local peoples is a necessary condition for realizing the practice of conservation; other authors note that various 'traditional' beliefs and understandings about the natural surroundings may not necessarily lead to the practice of conservation. If it is accepted that a perspective on nature that is 'conservation-oriented' is necessary in order to protect what is left of the planet's biodiversity, then how and in what conditions can this kind of orientation develop? Certainly, a change in awareness on the part of only local peoples is not a sufficient condition for the practice of conservation. The chapters here also advocate for a change in orientation of the governments and transnational environmentalist organizations that claim they are protecting the world's 'last great places'. That change in orientation should be in the way that they 'collaborate' in planning with local peoples living in the vicinity of protected areas, not just in the terms of 'participation' they allow in implementation. However, might that change in orientation also encompass how they understand 'the environment'? For individuals with a 'planetary orientation' towards conservation, it appears that environmentalists often have a very narrow, and sadly restricted, understanding of what the problems are and how to fix them. An understanding that is temporally more nuanced in terms of both biohistory and local people's histories, as well as spatially informed in terms of an understanding of global networks of trade that feed into the region and exploit it,

would help to give conservationists a better understanding both of what is involved and how to collaborate more effectively in order to cultivate local practices of and attitudes towards conservation.

Agrawal (2005) has concentrated upon the cultivation of a subjectivity of care for the environment, which he calls 'environmentality', and has suggested that this involves a 'belief' in conservation awareness. People come to believe that environmental protection is necessary given certain circumstances. If a conservation orientation is, in part, a 'belief', then indeed the construction of that belief could be achieved in a various ways, either by more peaceful 'proselytization' or by means of a 'holy war'. However, instead of thinking that only one side has the 'correct' beliefs, the authors in this part help us to consider that perhaps it is more fruitful to consider a conservation subjectivity as more closely approximating a 'syncretic faith', where differently situated adherents prioritize different elements of the synthesis. As Afiff and Lowe suggested in Chapter 12, 'projects of nature-making' in the Malay Archipelago, involving people from different parts of the planet, have a long history; some of the earlier projects to understand and 'make' nature were far more genuinely collaborative than what we have seen taking place in the formation of national parks and protected areas in the past century. Hence, through the discussions in the chapters in this part, we want to challenge all parties involved – environmentalists, government officials, NGO activists, and members of local communities – to attend to the multiplicity of beliefs and practices that can constitute a syncretic 'conservation imperative', one that is a truly collaborative project accommodating the interests and knowledges of all parties.

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Part III LEGAL AND GOVERNANCE FRAMEWORKS FOR CONSERVATION

23

Introduction to Part III

ALAN KHEE-JIN TAN

The chapters that follow seek to assess the efficacy of the laws, policies and institutions that governments have established for protected-area management in Indonesia and Malaysia. In the process, the chapters analyse systemic governance problems such as the failure of laws (and lawmakers) to respond to the biological, sociological and political tensions inherent in protected-area management. Underlying such concerns is the practical problem of how different levels of government (at the federal/central, state/provincial and village/local interstices) may actually be working at cross-purposes in law-making and policy-setting, rather than in a coordinated and coherent fashion. In particular, the political challenges of federalism in Malaysia and the more recent regional autonomy movement in Indonesia will be assessed in relation to their impact on protected areas and local communities.

At its core, the problem is one of governance. The integrity of designated protected areas, be these terrestrial or marine areas, depends on the sanctity of their boundaries and the accommodation of competing uses. These are only possible if potentially conflicting priorities such as local communities' livelihoods, natural-resource extraction and spatial planning can be equitably and predictably reconciled. Consequently, protected-area management and biodiversity conservation must be conducted in a manner that takes into account the myriad economic activities (both legal or otherwise) that occur outside such areas, the encroachment that may take place into protected areas and the buffer zones around them and the legitimate customary rights of access

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enjoyed by communities living off the resources in these areas. Such issues, if and when regulated by law, require the following prerequisites: certainty in the content of laws, certainty in enforcement and certainty in impartial adjudication for resolving disputes.[1]

Unfortunately, these prerequisites are almost always lacking. The chapters in this part reveal how systemic problems arise in relation to legal certainty and governance. Tan, in Chapter 24 on the divided competences between centre and periphery, analyses how vague legislation and overlapping responsibilities among government agencies in Indonesia and Malaysia lead to the kind of uncertainty that can be readily exploited by commercial and developmental interests as well as corrupt officials. Elaborating on these challenges, Patlis, in Chapter 26, explains how laws and regulations appear to have been enacted to serve sectoral, as opposed to national, interests. Vague laws leave ample room for creative and opportunistic interpretation, setting the stage for central and local governments' tussles for competence. Little wonder then that multiple agencies claim overlapping competences and champion different policies, resulting in conflicts that are often resolved through extra-legal means favouring the politically powerful. Invariably, the victors are the vested interests such as the logging, mining and plantation companies and the government officials that back them, and seldom the alienated local communities. Often, the lack of a functioning dispute resolution mechanism (like an impartial court system) leaves disputes open to political manipulation.

In the specific context of the Malay Archipelago, the governance challenges facing Indonesia and Malaysia are broadly comparable, even though they may be manifested in varied forms. As detailed by Bettinger in Chapter 25 on the Malaysian parks' bureaucracy, the issue of protected areas is complicated by the historical competence that the Malaysian states and their hereditary rulers enjoy over land and forests. Hence, the 'national parks' and other protected areas that exist under Malaysian law are in reality state entities, which can only be created with the individual state government's consent. Once created, these entities face the risk of degazetting or reclassification by the same state authorities, particularly when faced with developmental priorities.[2]

In Indonesia, while the central government retains competence over the designation and management of almost all categories of protected areas,[3] the post-Suharto regional autonomy movement has decentralized substantial authority over forest exploitation and revenues to regional government units, specifically the *kabupaten* (districts) and *kota* (towns). Yet, the rushed attempt at decentralization resulted in power being transferred well before the strengthening of institutional capacity at regional levels. Hence, regional governments do not possess sufficient capacity to deal with critical issues such as biodiversity

protection and law enforcement. At the same time, the incentives to conserve are lacking, as is political accountability to local populations. Indeed, the local priority is to generate as much revenue as possible from the natural-resource base. The laws themselves are frequently unclear, and the exact division of competences between centre and periphery remains extremely uncertain. In most cases, the land/property tenure regime has yet to be properly clarified. This has created conflicts between traditional communities and government authorities over the proper demarcation and recognition of ancestral *adat* lands, protected areas and exploitable forests.

As detailed by Tan, Patlis, and McCarthy and Zen, the regional autonomy movement in Indonesia has had great impact on protected-area management and the rights of customary communities. For instance, protected areas face increasing pressures in the form of logging or developmental activities that are endorsed by regional governments. These activities are commonly conducted right up to (and often, well into) the perimeters of protected areas. In most cases, the laws (even if clear and adequate), are hardly ever enforced. Indeed, there is credible evidence from Indonesia that illegal logging and mining and encroachment into protected areas are occurring at alarming rates, with commercial interests cultivating new clientelist relationships with local governors, district heads, legislative assembly members and military commanders for enhanced access to natural resources. For all their virtues in promoting a more democratic and 'subsidiarity' approach to governance, regional autonomy in Indonesia (and to a lesser extent, federalism in Malaysia) have been blamed for emboldening local elites and promoting the spread of corruption into the regions.

As explained by McCarthy and Zen in their chapter, the circumvention of legal apparatuses by vested interests was already a feature of natural resource politics in the Suharto days. The fear today is that the situation may have become worse with the increasing cultivation of local elites and their increasing defiance of central laws. In response, the central government has tried to rein in the regional governments by recentralizing powers through sectoral legislation such as the forestry law. However, such moves bring the central government into direct conflict with the regional autonomy laws, the local entities which these laws purport to benefit and the expectation of local actors for less interference from the centre.

While regional governments have popularly been demonized as anti-conservationist, there have been some instances of enlightened local authorities being prepared to use their newly found autonomy to benefit protected areas and local communities. Patlis refers to district government initiatives to better manage marine protected areas. Indeed, regional governments appear to be the

future hope (and bane!) of natural-resource management in the era of regional autonomy in Indonesia. At the same time, partnerships have also been struck up among governments, environmental NGOs, local communities and other relevant actors to establish co-management initiatives for several protected areas.

McCarthy and Zen, in their analysis of the showpiece Leuser National Park in North Sumatra, describe the challenges facing biodiversity conservation in Indonesia and the move away from the traditional conception of protected-area management to one involving co-management and incentive tools. In particular, the authors analyze the European Union-backed Integrated Conservation and Development Project (ICDP) approach at Leuser. Despite its well-meaning ideals, the Leuser approach failed to provide sufficient incentives to support sustainable livelihoods or to alter attitudes and behaviour on a significant scale. Moreover, the Leuser management authority ended up competing with and incurring the resentment of not only state agencies, but local NGOs as well. Indeed, the authority appeared to have employed territorial control strategies that promoted alien preservationist ideals and lacked local legitimacy. McCarthy and Zen conclude that the project was ultimately undermined by the lack of a political constituency in Indonesia for a preservationist model of nature conservation. Indeed, this model ran against the established institutional milieu that promoted economic development over biodiversity policy and local communities. This is borne out by the destruction expected to be wreaked by the Ladia Galaska Highway project.

In sum, the chapters provide overarching analyses of the legal and governance problems facing protected-area management in Indonesia and Malaysia, particularly the complications posed by regional autonomy and federal–state relations. At the same time, the authors have sought to identify solutions for reconciling the hugely competing needs such as the sanctity of protected areas, the imperative for development and the rights of local communities.

End notes

1. Certainty in itself is not sufficient. Needless to say, there must also be equity in the content, enforcement and adjudication of laws.
2. See the examples of Bukit Cahaya and Tioman provided by Bettinger (Chapter 25) and Tan (Chapter 24), respectively.
3. The categorization of the various types of protected areas is itself a source of confusion, see Patlis (Chapter 26).

24

Protected-area management in Indonesia and Malaysia: the challenge of divided competences between centre and periphery

ALAN KHEE-JIN TAN

Overview

In countries worldwide, including in Asia, the management of protected areas and national parks can often be compromised by the uncertain demarcation of legal authority between central and local authorities, and among different sectoral agencies within each level of government. While central governments often claim the authority to gazette and establish protected areas, their effective management inevitably falls on autonomous provincial or state institutions where the areas actually lie. In carrying out their functions, local authorities may typically pursue policies and priorities that are at odds with those of the central government. At the same time, sectoral agencies in charge of associated activities such as forestry, mining, agriculture and settlement can also create pressures on adjoining protected areas. In practice, a proliferation of agencies at both the central and local levels can lead to coordination difficulties and power rivalries. Overlapping competences among institutions are thus common within, and between, levels of government.

In some countries, the central government may have authority over general policy issues such as biodiversity and international treaty commitments, but less over related issues in the field such as land use and natural-resource exploitation. This introduces the familiar problem of overlapping competences

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between central and local governments, with the typical result being coordination breakdowns and conflicting policies. For instance, the central government may have some legal authority over protected areas, but not the surrounding lands that are needed as buffer zones. Consequently, indiscriminate development of adjoining lands accompanied by weak law enforcement by local authorities can severely prejudice the relevant protected areas. Vested interests such as logging companies can also take advantage of legal vacuums and uncertainties to encroach into protected areas.

In sum, centre–periphery politics feature hugely in those countries where legal and institutional complexities translate into divided competences over protected-area management. It is thus critical for such complications to be resolved or ameliorated in order to establish more effective protected-area management systems. This chapter will assess and compare the situation in Indonesia and Malaysia, two countries where centre–periphery tensions typically complicate the protected–area management effort.

Indonesia: the perils of regional autonomy

Indonesia is a sprawling archipelago of some 17 000 islands, divided into 30 provinces, 2 special regions and the Jakarta Special Capital Region. It is one of the world's 'mega-diversity' countries, with huge tracts of terrestrial and marine ecosystems containing rich species of fauna and flora. Under the IUCN's (The World Conservation Union) 2003 categorization, Indonesia has 965 protected areas of all categories, covering some 24 million hectares or 12.5% of total land area (World Resources Institute 2005a, b). In addition, there are 13.6 million hectares of marine and littoral protected areas.

Since the fall of the Suharto administration in 1998, the country has been undergoing dramatic changes and reform, particularly as regards centre–periphery relations. The regional autonomy movement that has characterized post-Suharto Indonesia is still evolving today, with ever more provinces and districts being proposed and regional governments clamouring to establish greater autonomy over local affairs. In the chaos following Suharto's downfall and the loss of East Timor, the central government hurriedly conceived regional autonomy to stave off national disintegration and to offer resource-rich regions more financial control over their revenue streams (Tan 2005). As part of these reforms, Law (UU) 22/1999 on Regional Government came into force on 1 January 2001, together with the accompanying UU 25/1999 on Fiscal Balance between the Central Government and the Regions. In October 2004, these two laws were respectively revised by UU 32/2004 on Regional Government and UU 33/2004 on Fiscal Balance between the Central Government and the Regions.

Together, these laws and the subsidiary legislation enacted thereunder (collectively referred to here as the 'regional autonomy laws') brought with them far-reaching consequences for Indonesia's local government units. Pursuant to regional autonomy, substantial portions of governance and decision-making authority are meant to be transferred to the regions, including competence over forestry and other natural resources.

One of the most astounding features of regional autonomy in Indonesia is the transfer of substantive powers directly to the 'second-level' regencies/districts (*kabupaten*) and towns/municipalities (*kota*), as opposed to the 'first-level' provinces (*propinsi*).[1] There are many theories for this unusual move. Amongst the most well-cited is the central government's apparent belief that autonomy for second-level units is far less risky, given that these are too numerous, disparate and ill-coordinated to agitate for independence. In contrast, many of the provinces are viable and ready enough to secede, as evidenced by the separatist tendencies in Aceh and Papua. Hence, pursuant to the regional autonomy laws, the regencies and towns became recognized as 'autonomous regions' (*daerah otonom*), and were given significant powers independent of the provinces of which they are part. In relation to forest management, for instance, the authority to develop forestry resources has now been transferred directly to the regency/town level, bypassing the provincial authorities whose limited role is to act as facilitators in forestry management. As regards the all-important issue of revenue distribution, the regional autonomy laws provide for 20% of forest utilization rights levies to be retained by the central government, with 80% accruing to the regions (16% to the provinces and a hefty 64% to the producing regency or town).[2] In sum, the regency/town has emerged as the new locus of devolved authority in present-day Indonesia.

Where forest protected areas are concerned, the situation is far from clear. Forested areas with protected status, known under Indonesia law as 'conservation forests' or *hutan konservasi*,[3] are intimately linked with forestry exploitation and other land-use issues. Yet, the authority to designate such areas has apparently not been devolved, and remains with the central government. The relevant authority is the Directorate-General of Forest Protection and Nature Conservation (known by its Indonesian acronym, PHKA) within the Ministry of Forestry. Thus, while the management of *production* forests have been devolved to the regions (on account of their revenue-generating potential), conservation areas still come under the purview of the central ministry. Indeed, the ministry has gazetted several new national parks in recent years, albeit in consultation with local regencies and provinces.

The idea of 'conservation areas' in Indonesia encompasses several categories of parks, reserves and sanctuaries. Specifically, the often-used umbrella term

'conservation forests' (*hutan konservasi*) comprises the national parks (*taman nasional*), nature reserves (*cagar alam*), game or wildlife reserves (*suaka margasatwa*), recreation parks (*taman wisata alam*), hunting parks (*taman buru*) and grand forest parks (*taman hutan raya*).[4] There are currently 50 national parks in all, with thousands of smaller reserves and recreation parks spread across the country. The various categories of conservation forests are established at the national level, with the exception of *taman hutan raya*, which come under the provincial governments. In addition, there are various categories of smaller parks and reserves, which fall under the designating authority of provincial and regency governments. Overall, even though the Ministry of Forestry retains the power to gazette even the smallest of conservation forests, the reality is that their actual management tends to fall to the local authorities, specifically the provincial and regency Forestry Offices. This was the position even during the Suharto New-Order era, and has not changed significantly with regional autonomy. What has dramatically changed, though, is the level of illegal encroachment and the lack of enforcement in these areas.

The current status of the protected areas system must thus be understood within the context of the ongoing regional autonomy movement and its implications for the forestry sector. With authority over forest exploitation having been substantially devolved to the regional governments, the reality on the ground is that many forest concessions are being granted and exploited right up to the perimeters of protected areas. Indeed, as elaborated below, illegal logging is occurring inside many protected areas, even the national parks! While this was not uncommon even during the Suharto years, the situation today is exacerbated by the fact that the central government no longer enjoys effective control on the ground. Thus, emboldened local politicians have become the new beneficiaries of traditional Indonesian-style patronage or 'clientelist' politics, with businessmen and other vested interests cultivating them intensely for logging concessions, allowances and other favours, often resulting in encroachment into protected areas (McCarthy 2002).

Encroachment is often made worse by the fact that the laws continue to be very vague, thus rendering them open to flexible interpretation by vested interests. Despite their spirit and intent, the regional autonomy laws contain inherent contradictions. Several government regulations (i.e. secondary legislation enacted by the central government pursuant to the main Laws or *Undang-undang*) purport to recentralize powers, thereby contradicting the parent laws blatantly. In 2002, for instance, Government Regulation PP 34/2002 on Forest Management, Exploitation and Utilisation rolled back many of the autonomy reforms and purported to recentralize power in contradiction of the main regional autonomy laws.

Such legislative uncertainties are compounded by the central government's reluctance – particularly on the part of the Ministry of Forestry – to give up power over lucrative natural-resource issues. Indeed, the ministry continues to behave as if no forest policy can be made without its initiative or consent. As mentioned above, the main legislation relating to forestry – UU 41/1999 on Forestry and its implementing PP 34/2002 – are in many respects inconsistent with the regional autonomy laws. UU 41/1999, for instance, purports to repose authority over forest administration in the central government.[5] Furthermore, it continues to subject the rights of customary communities to the dictates of the central government. The rights of such communities within customary forests, for instance, are recognized only to the extent that they do not conflict with 'national priorities', this being defined solely at the central government's discretion.[6]

The underlying political context is critical – successive governments in Indonesia continue to face pressure to backtrack on regional autonomy in order to preserve the fiction of a unitary state (*negara kesatuan*), the founding policy behind Indonesia's creation in 1945. Resistance to regional autonomy has also come from the provinces themselves, which are alarmed over the enhanced powers of their constituent regencies and towns. This makes for increasing tension between these local government units. Conservationists and NGOs have themselves warned of the peril of leaving natural-resource management to profit-motivated regional governments.

Meanwhile, a bewildering patchwork of laws and regulations on regional autonomy continues to be enacted, the latest being UU 32/2004 and UU 33/2004. Yet, these instruments typically contradict one another, often displaying little real commitment to the transfer of power to the regions. Again, the vagueness of these laws leaves them open to differing interpretations, particularly by regional leaders and governments. There is also a troubling habit for new laws to be passed every so often, accompanying the frequent change of personalities at the helm of various agencies and regional governments. These uncertainties have thus fuelled the desire among some quarters – particularly within the Ministry of Forestry – to recentralize powers in Jakarta.

What is noteworthy here is that with regional autonomy, Ministerial Decisions issued by the respective sectoral ministries no longer occupy a position within the hierarchy of laws in Indonesia. The only legislation of the central government which bind regional governments are Laws, Government Regulations and Presidential Regulations.[7] Hence, even though the Ministry of Forestry continues to believe that its ministerial decrees are relevant, the reality on the ground is that regional governments no longer view these to be authoritative. This has set the stage for an increasingly troubled relationship between the regional governments and the Ministry of Forestry.

The confusion over the demarcation of legal authority has also been aggravated by the central and regional governments' penchant for issuing laws to neutralize each other's actions. Thus, the regional governments – particularly the regencies – have begun to enact all forms of *Peraturan Daerah* or Regional Regulations (which status is newly elevated under the regional autonomy laws), giving themselves more control over natural resources and revenue streams than allowed under higher national laws. In relation to the timber industry, for instance, the regencies have been busy issuing their own logging licences and restructuring the provincial forestry service so that it reports directly to the regency head or *bupati*, as opposed to the provincial governor or central ministry (Obidzinski & Barr 2003). Efforts by the Ministry of Forestry to halt the issuance of regency concessions have typically proven futile, and some regional governments have even disavowed pre-existing concessions issued by the central government (Dermawan & Resosudarmo 2002).

In sum, the democratization process in Indonesia has effectively translated into a messy decentralization of political power to the regions, with increased access by local elites to the profits of natural-resource exploitation. In the absence of functioning state institutions and law enforcement, direct personal ties built on reciprocity and favours are filling the legal vacuum to govern relations between patrons and clients. This is especially evident where rules imposed by central agencies are perceived to lack local legitimacy or to contradict local traditions (McCarthy 2002). Corruption and patronage politics result in local governments awarding concessions to developers, many of them encroaching indiscriminately into protected areas and threatening the livelihoods of local communities. Meanwhile, wary of the people's aversion to harsh Suharto-era controls, the central government has been politically unwilling or unable to assert its authority. Similarly, the courts, many of them corrupt, are unable to resolve conflicts fairly.

Such systemic weaknesses accompanying the process of decentralization translate into serious problems on the ground. In particular, illegal logging, timber smuggling and wildlife poaching have become rampant. In the affected areas, illegal logging is typically conducted by criminal enterprises backed up by well-connected business interests that have no qualms in bribing corrupt local officials and intimidating local communities. These vested interests are so strong that they can effectively resist and intimidate law enforcement authorities (Barber & Schweithelm 2000).

Some researchers believe that illegal exporting of logs was actually more controlled during the Suharto period, and that corruption, illegal logging and land-use conflicts have become much more acute with regional autonomy (Smith *et al.* 2003). The encroachment of national parks and other protected

forest areas, already common before regional autonomy, is now occurring with alarming regularity and intensity. The government has responded by proposing tough new laws, even an emergency law on illegal logging, which promises severe sentences (reportedly, the death penalty) for illegal loggers (*Straits Times* 2004).[8] However, this law is now unlikely to be passed; even if should be, it does not appear that the government has the political will to enforce it against the most intransigent parties.

In addition, illegal logging continues to be fuelled by declining timber supplies from legal sources, the collapse of government control and the post-economic crisis search for alternative incomes (Sunderlin 2002). The problem is aggravated by high government taxes on legal felling. Timber companies seeking to lower production costs have thus resorted to felling more trees than their concessions allow while reducing commitments to reforestation. Structurally, the huge overcapacity in the plywood, and pulp and paper industries continues to inflate demand for raw timber. Where legal supplies are inadequate to feed such demand, illegal logging (e.g. of protected forests) steps in to fill the breach.

The political imperative to decentralize has also resulted in a rushed attempt to devolve power, neglecting the reality that most local governments have little or no capacity for proper spatial planning and resource management. At the same time, the procedures for environmental impact assessment (EIA) of proposed land uses are not sufficiently defined.[9] This is mainly because EIA commissionings and appraisals come under the purview of a different central agency, the Office of the State Minister for the Environment. This ministry lacks authority and influence as it is not a fully fledged 'departmental' ministry. In fact, it only has advisory (and not enforcement) powers in the regions. As a result, it (and the EIA system it administers) has little effect over the activities of regional governments or of powerful ministries such as the Ministry of Forestry.

It is within the context of such dynamics that we are hearing reports of devastating damage to protected areas caused by illegal logging and poaching. In many places, illegal activities are reportedly conducted with the collusion of local governments, the military, the police and even conservation authorities (Newman *et al.* 1999). Widespread illegal logging and poaching, carried out in collusion with local authorities, have been documented in showpiece national parks such as Gunung Leuser, in North Sumatra; Aceh, Kerinchi-Seblat and Bukit Barisan Selatan, in Sumatra; Lore Lindu, in Sulawesi; and Tanjung Puting, Gunung Palung and Kutai, in Kalimantan.

Another important factor is that national parks and other protected areas are perceived by local people as symbols of central authority and repression. In

Tanjung Puting, one of the worst-hit national parks, local communities are apparently retaliating for having been forcibly relocated by the Suharto regime to make way for the park.[10] Indeed, many national parks in Indonesia were created without adequate consideration of local people's interests, thereby causing massive resentment (Indrawan 2005). Many local communities depend on these areas for their livelihood, and the designation of a protected area without provision for their participation effectively cuts them off from its resources. Hence, the desire to protect these areas is totally lacking among local communities; on the contrary, the relatively pristine state of these areas is an irresistible invitation to encroach, particularly where surrounding forests have been denuded.[11]

In retrospect, regional autonomy in Indonesia has decentralized powers well before the provinces and regencies have had the time to develop strong institutions necessary for good governance. In particular, the shifting of power to the regions has not been accompanied by increased manpower and technical capacity to patrol protected areas and enforce sustainable forestry practices. In many regions, the forestry bureaucracy remains understaffed, poorly trained, lowly paid and corrupt (Smith *et al.* 2003). In the meantime, significant policy-making, budgetary and planning powers look set to remain with central authorities in Jakarta for a while. As a result, there is a severe mismatch between authority and capacity in the forestry sector.

The critical lesson from the Indonesian experience is that there is a pressing need to consult with and involve local stakeholders when designating and managing protected areas. The local communities need to be given sufficient information as well as an opportunity to participate meaningfully in decision-making so as to make informed choices (Indrawan 2005). Factors such as resource valuation, potential loss of income, limited entry into protected areas, alternative sources of livelihood, dissemination of information and participation by third-party advisors, such as NGOs, will all aid in making informed decisions, so that any future outcomes stand a greater chance of being supported by local communities. Finally, land-use and forestry policies in adjacent regions must be coordinated such that these do not end up causing pressure on the protected areas. This is particularly needed where a protected area straddles the borders of several administrative units such as regencies or subdistricts.

To secure protected areas from encroachment, the regency forestry officials need to be given adequate training, resources and financial incentives. In most national parks, the local forestry offices are too poorly funded to carry out proper enforcement activities. Local park officials are paid so little that the temptation to accept bribes to facilitate illegal logging is great. As a result,

the park system is plagued with corruption, fuelling the illegal logging problem. Close cooperation is thus needed from the local police, as well as the prosecutors and courts. If necessary, military effort may be required to adequately protect national parks. However, these are all huge challenges, given the lack of resources and the rampant practice of bribing local officials, including the police, prosecutors and judges. The fact that many illegal logging activities are conducted or supported by military and government officials makes it even more difficult to control the problem.

Given the close linkage between protected areas and the logging activities surrounding them, it is clear that the security of protected areas depends heavily on systemic long-term reforms to the forestry sector. This is a monumental challenge in itself, and will take years or decades to achieve, if at all. From a realistic short-term perspective, the first immediate measure that can be taken is to clarify the regional autonomy and forestry laws to make clear the demarcation of authority among the central, provincial and regency governments. In the meantime, more effective enforcement must be ensured against encroachment into protected areas, with penalties against illegal loggers increased significantly. To achieve these ends, there must be greater mutual trust and cooperation between the central and regional authorities.

One way of achieving this cooperation is to establish an enforcement body that is centrally organized but drawing resources from both the central and regional governments. Such an arrangement could prove useful in fostering greater centre–periphery and interministry cooperation, without compromising the region's right over their resources and revenue streams. The central government can assist the regions in providing the financial and technical capacity to patrol forests, apprehend illegal loggers, gather evidence, pursue prosecutions and administer sanctions. The regions must also be provided with greater incentives to secure protected areas, including manpower resources, higher salaries, and a share of monetary fines and park-entry or ecotourism revenues. In the aggregate, regional governments must be persuaded to recognize the benefits of proper enforcement, given that illegal logging deprives them of huge amounts of revenue.

To date, several proposals to overcome the fragmented state of natural-resource management have been made. For instance, the Office of the State Minister for the Environment recently proposed the establishment of a special agency free of influence from vested interests to counter illegal logging. However, such proposals are good only on paper if there is no political will to stem out corruption in the forestry sector. In the first place, it does not appear that the proposal is supported by the Ministry of Forestry, whose cooperation is absolutely critical. In any event, providing incentives to regional governments will be

meaningless if officials staffing the local bureaucracies perceive bribes as a far more attractive option. Thus, what does it matter to these officials that their governments lose out on revenues, when they themselves can be enriched? Realistically, the security of protected areas is wholly dependent on the eradication of corruption in the forestry sector, in itself a tall order.

It may well be that some form of centralized management of protected areas is inevitable, at least in the short term. If regional officials fail to enforce laws relating to protected areas or are conniving with illegal loggers to circumvent these laws, the central government must be able to step in to assert authority. While this does not fully resolve the forestry sector's systemic problems as described above, it at least guarantees some security for the national parks and other protected areas. Other short- to mid-term measures that can be undertaken include reforming the pulp and paper industries. It is absolutely necessary to ease the overcapacity in these industries, which currently imposes tremendous pressure on forests in protected areas. The environmental protection arms of the local regency governments should also be strengthened such that they are in a position to impose EIA requirements on their forestry counterparts. This process should be open to scrutiny by local-level NGOs and the media, themselves the subjects of empowerment in the age of regional autonomy. Overall, the various parties must be given sufficient incentives to embark on proper and sustainable forestry management programmes.

Malaysia: federal–state complications

Neighbouring Malaysia is a federation of 13 states, comprising the 11 Peninsular (or West) Malaysian states and the two East Malaysian states of Sabah and Sarawak. As with any federal system of government, the relationship between the central and state governments in Malaysia is often complicated by issues of state autonomy. The division of legal authority between centre and periphery poses specific problems for protected-area conservation and management. To begin with, the Malaysian Constitution provides substantial autonomy for the individual states over their natural-resource base. In particular, the resource-rich East Malaysian states of Sabah and Sarawak enjoy greater autonomy than their peninsular counterparts, as part of the terms of their entry into the Malaysian federation in 1963. On the whole, the federal government enjoys limited competence over critical issues such as land use and natural-resource exploitation, particularly in Sabah and Sarawak.

According to the IUCN's categorization, Malaysia has a total of 647 protected areas of all categories, covering some 10 million hectares or 30.6% of the total land area (World Resources Institute 2005a). In addition, there are 1.3 million

hectares of marine and littoral protected areas. The total area of forests was estimated in 2003 to be 19.52 million hectares or 59.5% of land area (Traffic International 2004). Of these forests, 14.39 million hectares are managed under the 'permanent forest estate' (PFE) system pursuant to the National Forestry Act of 1984.[12] The PFE system, also known interchangeably as permanent reserve forests (PRF), comprises four categories – production, protection, amenity, and research and education forests. The bulk of the PFE is made up of production forests, with only about 3 million hectares designated as protected forests (Traffic International 2004).

The protected forests within the PFE system supplement the additional 2.40 million hectares of protected areas established separately under other specific legislation. The overlap between these protected areas and the PFE protected forests amount to some 0.25 million hectares (Traffic International 2004). The total coverage of protected areas in Malaysia is thus the sum of PFE protected forests and protected areas designated under specific legislation. The latter category includes national and state parks as well as wildlife and bird sanctuaries established under specific federal and state legislation.

The protected areas system in Malaysia cannot be fully understood without reference to the underlying constitutional issues pertaining to land tenure, natural resources and the overall dynamics of federal–state relations. Under the Malaysian Federal Constitution, the division of competences between the federal and state legislatures is governed under Article 74 and Schedule 9. The latter schedule sets out three lists enumerating the respective powers of the federal and state legislatures – the Federal, State and Concurrent Lists. The *Dewan Rakyat* or Federal Parliament enjoys competence over matters in the Federal List, while the respective State Legislative Assemblies (*Dewan Undangan Negeri*) have powers over matters in the State List. Matters enumerated in the Concurrent List may fall within the competence of both the federal and state legislatures, but in the event of inconsistency between a federal law and state law, the former prevails with state law being void to the extent of the inconsistency.[13] The state and concurrent lists for Sabah and Sarawak are different, with more powers generally reserved to the governments of these states.[14]

Pursuant to Schedule 9 of the Constitution, land and forestry matters are found in the State List. In general, this means that the states enjoy exclusive competence over these issues. That said, the 11 peninsular states have opted to accept the federally enacted National Land Code (NLC) of 1965 as well as the National Forestry Act (NFA) of 1984.[15] As a result, the laws and policies relating to land and forestry matters are more or less standardized across the Peninsula, even as the actual implementation of these laws remains with the individual states. The NLC and NFA do not change the fundamental tenet of state

competence over land and forests; they merely seek to harmonize the relationship between the states and the federation in these matters. Very importantly, the states retain the prerogative to undertake fundamental acts such as designating (and degazetting) PFE forests within the terms of the NFA. It should also be noted that the NLC and NFA do not apply to Sabah and Sarawak, which have their own legislation on land and forests.

The PFE forests (including the category of protected forests within) come within the purview of the federal and state forestry departments. The federal-level Forestry Department of Peninsular Malaysia was formerly constituted under the Ministry of Primary Industries[16] but has now been transferred to the Ministry of Natural Resources and the Environment (MNRE).[17] The federal Forestry Department does not manage the forests directly; this is done by the state authorities pursuant to state autonomy over forests. Indeed, the federal department possesses only advisory competence on planning, research and development, and provision of technical assistance to states. One of its main functions is to develop manuals and guidelines; these are implemented by the respective state forestry departments and district forest offices.

As for non-PFE protected areas, the Concurrent List contains an explicit provision on national parks and the protection of wild animals and birds. The key federal legislation providing for the gazetting of national parks is the National Parks Act (NPA) of 1980. The NPA is administered by the Director-General of Wildlife and National Parks, who heads the Department of Wildlife and National Parks (known by its Malay acronym, PERHILITAN) within the federal Ministry of Natural Resources and the Environment (MNRE).

The classification and management of national parks must be appreciated within the delicate context of federal–state relations. Under the NPA, the state governments may, upon the request of the federal government, reserve any land within the states, including any marine area, for the purpose of a national park. This makes it clear that the consent of the state government is first needed, even though national parks are federally designated. As protected areas are so intimately connected with land and forestry issues, the states jealously guard their prerogative to agree to the establishment of national parks and other protected areas. The NPA also provides for the establishment of a National Parks Advisory Council and National Parks Committee to oversee the implementation and management of each designated national park. Both these bodies have representation from federal as well as state officials.

As it turned out, the NPA has proven to be hugely unpopular with the states ever since its inception. One reason for this is that pursuant to the NPA, states cannot degazette an NPA national park, once it is designated, without the relevant minister's approval. Hence, the states perceive a loss of control over

parks designated under the NPA. As a measure of its colossal failure, only one national park has to date been designated under the NPA. This is the Penang National Park surrounding the Pantai Acheh Forest Reserve in the state of Penang.[18] The other states have pointedly refused to gazette NPA national parks, preferring instead to establish parks under their own state legislation. The famous Taman Negara, often referred to as a 'national park',[19] is in fact three adjoining state parks gazetted under separate enactments by the three states – Pahang, Terengganu and Kelantan – whose border territories make up its land area.[20] Thus, the NPA explicitly excludes Taman Negara from its ambit; neither does the NPA apply to Sabah and Sarawak, which have their own parks legislation.

The Third Malaysia Plan of 1976–89 (a developmental strategy that is issued for fixed-year periods) had called for the establishment of a comprehensive system of protected areas for the country, with numerous parks being identified for designation pursuant to the NPA. However, the individual states' reticence has meant that none of these identified parks have so far been designated. In the mid 1990s, PERHILITAN prepared a Master Plan for a protected areas system for Peninsular Malaysia, again identifying several key areas for gazettement (Department of Wildlife and National Parks 1996; Jomo *et al.* 2004). However, the federal government continued to face difficulty in persuading the states to commit forest areas for gazettement as national parks or wildlife sanctuaries.

Apart from Taman Negara, other prominent examples of state-enacted parks include Royal Belum in Perak state and Endau-Rompin on the border of Johor and Pahang states. Royal Belum was designated in March 2000 as a state park, even though the federal government had spent years trying to persuade the Perak state government to designate it a national park under the NPA.[21] Similarly, despite being called a 'national park', Endau-Rompin was enacted under the National Parks (Johor) Corporation Enactment of 1989 (a state legislation), and comes under the management of a privatized state body known as the National Park (Johor) Corporation. This came after nearly two decades of wrangling between the federal government and the Pahang and Johor state governments, during which the states refused to give up their right to conduct logging operations in the area.

Apart from the NPA, the other relevant legislation is the Protection of Wild Life Act of 1972. This act repealed the Wild Animals and Birds Protection Ordinance of 1955, and consolidates the laws relating to the protection of wildlife. As with the NPA, this act applies only to Peninsular Malaysia, and is administered by the Director-General of Wildlife and National Parks. Under the act, two further categories of protected areas can be established in Peninsular Malaysia – wildlife reserves and wildlife sanctuaries.[22] However,

these can only be designated by state authorities on state land, and the boundaries of such areas can be defined and altered by the individual states at their discretion. Hence, while the Protection of Wild Life Act sets out general policies on wildlife protection, it cannot actually compel the states to designate reserves and sanctuaries. This is a weakness shared by the NPA and its national park regime.

As for Marine Protected Areas, these take the form of marine parks and reserves coming within the terms of Part IX of the Fisheries Act. Pursuant to this act, the Establishment of Marine Parks Malaysia Order of 1994 sets out the procedures for the designation of marine parks. The functions relating to marine parks are exercised by the Fisheries Department constituted under the federal-level Ministry of Agriculture and Agro-Based Industry. Similar to the terrestrial parks, there exists a National Advisory Council for Marine Parks and Marine Reserves that draws representation from both the federal and state governments to ensure sufficient coordination.

As we can see, the protected areas system in Malaysia today consists of a bewildering variety of PFE protected forests, parks (both national and state) and wildlife sanctuaries and reserves (primarily state),[23] with most of these coming under the direct control of state authorities instead of the federal agency PERHILITAN. Within PERHILITAN, the management of protected areas is undertaken by the Protected Areas Division (PAD). At the headquarters level, the PAD is small and has limited competence to coordinate matters relating to general policy, enforcement, research and inventories. This is so partly because so few areas have been designated under the NPA to date, but also because the management of the state-designated protected areas is largely conducted by the states themselves, with PAD/PERHILITAN only providing technical advice when requested by the states. At the state level, a number of agencies have overlapping competence over forestry, land-use and protected-area issues. Some of these agencies are integrated with the respective federal departments, such as the state forestry departments, while others such as the Wildlife and National Parks units are less integrated with their federal counterparts (Traffic International 2004).

The other relevant piece of legislation in Peninsular Malaysia is the Environmental Quality Act (EQA) of 1974. The EQA governs matters such as pollution control and licensing for polluting activities. Pursuant to section 34A on Environmental Impact Assessments (EIAs), the Environmental Quality (Prescribed Activities and EIA) Order of 1987 prescribes mandatory EIAs for a host of named activities. Those of relevance to protected areas include the development of airstrips in national parks, logging or conversion of forest land in areas adjacent to state parks, national parks and national marine parks, the clearing of mangrove

swamps on islands adjacent to national marine parks, and the development of tourist and recreational facilities within national parks and in waters surrounding national marine parks. Hence, the EQA actually imposes a *federal* requirement for EIAs even where the developmental activity falls within the competence of the states. As explained below, this has led to several instances of conflicts between the federal Ministry of Environment and Natural Resources (the administrator of the EQA) and the state governments.

The situation in Sabah and Sarawak is very different. These two states, on account of their special constitutional status in the federation, have their own wholly separate legislation relating to land, forests and other natural resources. In addition, the provisions of the EQA do not apply to these states, which have their own environmental management and EIA laws. In Sabah, the Parks Enactment of 1984 provides for a statutory body known as Sabah Parks to run and manage the state's 'national' parks. There are currently six of these – Kinabalu, Tawau Hills, Crocker Range, Tunku Abdul Rahman, Turtle Island and Pulau Tiga (the latter three being marine parks). These parks are in reality state parks which have nothing to do with the Malaysian federal government. Sabah Parks is run by a Board of Trustees, whose operational and development budgets are provided by the state's Ministry of Tourism, Culture and Environment.

Under the Forest Enactment of 1968,[24] other categories of protected areas exist in Sabah. These include protection forests, mangroves, virgin jungle reserves and wildlife reserves. These protected areas are managed not by Sabah Parks, but by the Sabah Forestry Department. The department is constituted under the Chief Minister's Office and is responsible for the overall implementation of the Forest Enactment.[25] Meanwhile, wildlife issues (excepting those arising in parks run by Sabah Parks) come under the purview of the Sabah Wildlife Department, pursuant to the Wildlife Conservation Enactment of 1997. The department manages the three categories of protected areas created under the Wildlife Conservation Enactment – conservation areas, wildlife sanctuaries and wildlife hunting reserves. These include marine parks (excluding those run by Sabah Parks). Like Sabah Parks, the Wildlife Department is constituted under the state's Ministry of Tourism, Culture and Environment, although it does not quite enjoy the clear-cut and extensive authority that Sabah Parks has. The total forest area under all forms of protection is over 1.245 million hectares or 16% of the state's land area.

In Sarawak, the relevant legislation include the National Parks and Nature Reserves Ordinance of 1998, the Wildlife Protection Ordinance of 1998 and the Forests Ordinance of 1958.[26] The relevant state agency, the Forest Department, is overseen by the Ministry of Planning and Resource Management (MPRC), whose minister in recent years has been the state's Chief Minister himself.

In the mid 1990s, the Sarawak Forestry Corporation Ordinance was created by the state legislature, transferring the implementation role of the Forests Ordinance to a newly established private company, the Sarawak Forestry Corporation (SFC).[27] The SFC is wholly owned by the Sarawak Government and began operating only in June 2003. It is today the principal management body for forestry matters, including protected areas and biodiversity conservation (see Chapter 4 for specific discussion of the Master Plan for Sarawak's wildlife).

In the meantime, the downsized Forest Department appears to retain some statutory roles over forest management, including wildlife matters. Through its National Parks and Wildlife Division, the department also appears to claim a role as the designating authority for national parks in Sarawak. Given the uncertain division of powers, the possibility of overlapping competence between the Forest Department and SFC is ever present. The SFC's current priority appears to be forest development and not so much protected-area conservation. Yet, in recent years, it has displaced the Forest Department as the pre-eminent authority for the management of Sarawak's protected areas.[28] The transfer of responsibilities to the SFC was thought to be necessary as the state wanted a managing body that was independent of the civil service (Traffic International 2004). Yet, the SFC is still governed by a board that is dominated by the government. This has led to problems with its credibility and independence (Traffic International 2004). As in Sabah, 'national parks' in Sarawak are actually state parks enacted pursuant to state laws. Other categories of protected areas exist in Sarawak, including wildlife sanctuaries, wildlife rehabilitation centres, nature reserves and marine parks.[29]

A recent development of interest is the creation of a Transboundary Conservation Area (TBCA) along the border of Sarawak and Indonesia's West Kalimantan province. The first of these ITTO-supported[30] projects brought together the Lanjak-Entimau Wildlife Sanctuary and Batang Ai National Park in Sarawak, and the Betung Kerihun National Park in West Kalimantan. The TBCA is a fledgling effort between Malaysia and Indonesia to pursue parallel and cooperative management efforts across borders. Its creation acknowledges the reality that conservation challenges do not recognize political boundaries where there is essentially only one ecosystem in place.[31] The TBCA is the most important sanctuary in Borneo for orang-utans and other rare and threatened plant and animal species (Table 24.1).

Compared to Indonesia, illegal logging in Malaysia has been reduced to a considerable extent, arising from the tough penalties introduced by the National Forestry Act. Due in part to better enforcement, and in part to the lighter population stress, Malaysian protected areas are not as threatened by

Table 24.1 *Area under national parks, wildlife and bird sanctuaries in Malaysia, 2003 (in million hectares). Adapted from Traffic International (2004), as sourced from the Forestry Departments of Peninsular Malaysia, Sabah and Sarawak*

Region	National park/state park	Wildlife and bird sanctuary	Total
Peninsular Malaysia	0.58[a]	0.31[b]	0.89
Sabah	0.25	0.16[c]	0.41
Sarawak	0.80[d]	0.30[e]	1.10
Malaysia	1.63	0.77	2.40

[a] A total of 0.04 million hectares are located within the PRFs of Peninsular Malaysia.
[b] A total of 0.08 million hectares are located within the PRFs of Peninsular Malaysia.
[c] A total of 0.13 million hectares are located within the PRFs of Sabah.
[d] Includes 0.60 million hectares of proposed national parks.
[e] Includes 0.05 million hectares of proposed wildlife sanctuaries and nature reserves.

illegal logging. Of late, instances of illegal logging have been reported in Sarawak, where organized syndicates are suspected to be behind illegal logging activities at Gunung Gading National Park as well as several parks and reserves in Miri and Bintulu (Bernama News Agency 2003). The Sarawak Forestry Corporation's Security and Asset Protection Unit (SAPU) has in recent years seized illegally felled timber as well as arrested several perpetrators. SAPU appears to have played a far more effective enforcement role than the state Forestry Department in seizing not only timber but also wildlife taken in contravention of the Wildlife Ordinance (Traffic International 2004).

The pressures affecting protected areas in Malaysia arise more from developmental forces. These lead to policies that excessively favour industrialists, plantation owners and project proponents, without adequate consideration for protected areas and the local communities that depend on them. The major institutional weakness is the sheer number of agencies involved and the lack of coordination among them. Apart from the MNRE, there are other federal agencies with land-use and natural-resource agendas, including the Ministries of Plantation Industries and Commodities, Agriculture and Agro-Based Industry, Rural and Regional Government, Housing and Local Government and Energy, Water and Communications. Such a sector-based approach to governance presents coordination problems. At the same time, there are so many different categories of protected areas gazetted under various federal and state laws and managed by several agencies. As stated earlier, there are PFE protected forests coming under the federal and state Forestry Departments, the national parks, wildlife reserves and wildlife sanctuaries designated under specific federal laws

and managed by PERHILITAN and state agencies, the Marine Protected Areas managed by the Fisheries Department, and the state parks and nature reserves enacted under state legislation. There are also related laws and agencies governing protection of water resources, biodiversity and environmental impact assessments. In Sabah and Sarawak, the problem is compounded by the exclusive competence of state laws and agencies.

A key challenge here is to coordinate and reconcile the various laws and policies that are the purview of different agencies, both at federal and state levels. In its effort to involve the states in decision-making, the federal government has, over the years, set up various advisory councils and committees comprising high-level officials from both federal and state governments. Thus, the National Land Council, for instance, formulates national policy to control and utilize land in Peninsular Malaysia for agriculture, mining and forestry. On its part, the National Forestry Council deals with forest policy issues. As stated above, there is provision in the National Parks Act for advisory councils to assist with the management of gazetted parks. These efforts have all been useful (though not necessarily successful) in dealing with 'vertical' issues affecting federal–state relations. However, they have been less effective in dealing with the 'horizontal' overlaps occurring among the closely linked sectors such as agriculture, forestry, land tenure, mining and nature conservation. Clearly, there is a need to coordinate policies among sectoral agencies whose macro-developmental activities have direct or indirect impact on forests and protected areas.

The difficulties arise where the protected areas overlap, such as between PFE forests and protected areas gazetted under specific legislation. This results in concurrent and overlapping jurisdiction among the Forestry Departments, PERHILITAN and state-level agencies. One common phenomenon is the gazettement and regazettement of the same or overlapping land areas by different agencies pursuant to different laws. In the 1990s, for instance, there were reportedly 14 cases of double gazettement by the Forestry Department and PERHILITAN (Traffic International 2004). The problem is compounded by states seeking to degazette areas so as to remove or reduce their level of protection. Where PFEs overlap with protected areas managed by PERHILITAN, there is a real risk of degazettement by states claiming to be the ultimate authority. Indeed, under the National Forestry Act, states can degazette and alienate any part of the PFE, including protection forests, with minimal conditions.[32] Just as it is their right to contribute to the PFE, the states can withdraw PFE status, often without consulting federal agencies. There is thus very little protection for PFE forests.

On their part, the non-PFE protected areas designated under specific legislation enjoy more protection (but only if they do not overlap with PFEs). Under

the National Parks Act and the Protection of Wild Life Act, for instance, the federal government is supposed to be consulted when states wish to degazette national parks and wildlife reserves. Yet, there have been cases where some states have degazetted such protected area without first consulting the federal government as is required under the relevant acts. Indeed, between 1978 and 1994, 1.4 million hectares of protected areas were reported to have been degazetted (Raman 2002). As explained above, the requirement to consult the federal authorities has also led many states to resist the National Parks Act and to designate parks under their own state legislation instead.

In some cases, 'double gazettement' may actually be legally advantageous, given that a state may have to justify degazettement to more than one agency, including at the federal level. In Sabah, for instance, there have been cases of wildlife reserves designated under both the Wildlife Conservation Enactment and the Forest Enactment. While such cases should be clarified to prevent confusion and to increase coordination, dual protection may ironically provide further safeguards for the forests (Traffic International 2004). Hence, it can be seen that there is at least one positive, albeit unintended, by-product of overlaps in competence and jurisdiction.

The problems of overlapping jurisdiction and lack of coordination among agencies were especially acute when the Forestry Department and PERHILITAN were housed in separate ministries. Since 2003, however, both agencies have been brought together under the federal Ministry of Natural Resources and the Environment (MNRE). There should thus be less of the 'horizontal' coordination issues now. However, teething problems with the fledgling MNRE mean that coordination challenges will persist for a while. In particular, a new ministry like the MNRE is likely to have weak political clout vis-à-vis other more established agencies, particularly in terms of financial budget, enforcement capacity and manpower resources.

On the positive side, an enlarged MNRE may mean that the federal Forestry and PERHILITAN Departments will have a stronger and more united front when dealing with states wishing to degazette protected areas. In the past, these two agencies often worked at cross-purposes. There is also scope for influential federal-level coordinating agencies like the Economic Planning Unit (EPU) of the Prime Minister's Department to streamline the policies of the various agencies and states. In particular, the EPU's divisions on agriculture, forestry and natural resources and environment are playing an increasingly greater coordinating role in protected-area management.

It must be remembered that state mismanagement of forest resources occurs partly as a result of the states' weak financial positions. There have been past instances when, starved of federal funds, states have resorted to exploiting their

resource base to obtain revenue (Rachagan 1998). Over a long period, this can lead to encroachment of protected areas, degazetting of protected forests, or decimation of buffer zones. The federal government must squarely address such issues, particularly if the state concerned is ruled by opposition political parties and there is a perception in that state that federal aid is not forthcoming. Of course, resource mismanagement also arises from corruption, with vested interests lobbying politicians and state rulers (*sultans*)[33] to degazette forest areas for purposes of exploitation and development. Forests and natural resources remain very much a tool for patronage politics in Malaysia, and the fact that states have ultimate authority over these issues means that improperly motivated decisions will often be taken at the state level without accounting to federal authorities.

To tackle indiscriminate degazetting of protected areas (whether PFE or otherwise), there should be greater federal scrutiny of state action, particularly in enforcing the legal requirement for consultation. At the same time, the decision to degazette should not be taken at the level of the State Executive Council (which is the current practice) but at the respective State Legislative Assemblies, where there can at least be open debate and scrutiny by opposition parties. The federal and state governments should also work together to map protected areas properly and to define their boundaries so that overlapping gazetting can be minimized. Even within a PFE area, the demarcation between production and protection forests should be made clearer, with increased ratio allocation for the latter (Traffic International 2004). Concurrently, there should be progressive efforts made to gazette more protected areas outside of the PFE.

Overall, there is a need to rationalize the national protected areas system and to integrate the PFE protected-area classification with the network of national parks, reserves and sanctuaries created under separate legislation. In this regard, the government should consider enacting a new federal law specifically to give protected areas greater legal protection vis-à-vis degazettement and development projects.[34] A proper study should also be conducted to ensure that the protected areas system includes areas of sufficient size from the full range of habitats in the country, particularly the under represented ecosystems such as mangrove forests. In proposing a national integrated protected areas framework, one must be mindful of the intimate connection between protected areas, on the one hand, and forests and land tenure, on the other. The latter remains under state control in Malaysia, and will remain a formidable obstacle to rationalizing the forestry, wildlife and protected-area policies of not only the Peninsular states, but also Sabah and Sarawak. Greater coordination is thus needed between the federation and the states to maximize convergence of policies, particularly in implementation and enforcement.

A related problem lies with the lack of protection for lands adjacent to protected areas. This issue arises because the states retain control over adjoining lands, and can authorize development right up to the borders of protected areas. The lack of coordination between federal and state agencies can thus result in conservation efforts becoming undone by state-approved developmental projects. A protected area demarcated under federal law, for instance, can become compromised by state developmental activities occurring just outside its perimeter.

In this regard, the most acute problem relates to the marine parks. Since land belongs to the states, the state governments are free to approve logging or developmental projects on islands or coastal areas adjacent to existing marine parks. Pollution run-off from such activities can prove harmful to the park's ecology. The problem takes on a centre–periphery flavour when the federal Fisheries Department, in designating and managing Marine Protected Areas, finds itself hampered by the lack of authority over terrestrial activities on nearby islands and coastal areas. In general, the designation of marine parks by federal authorities typically focuses on aquatic considerations only, and omits to consider the impact of the adjoining terrestrial systems, which come under the control of the states. This is the biggest problem facing the effective management of Marine Protected Areas in Malaysia.

The problem is amply illustrated by the ongoing controversy over the proposed yachting marina on Tioman Island in Pahang state, considered a haven for coral reefs. The seas around Tioman were gazetted as a marine park in 1994 under the Fisheries Act. The marina project was championed by the Marine Department of the (federal) Ministry of Transport and the Pahang state government, even though it had been heavily criticized by the MNRE for its potentially harmful effects. The MNRE, however, considered itself as having 'no authority to stop it as it was a state project' (*Star* (Malaysia) 2004).

Following public outcry nationwide, the project was put on hold while the Marine Department conducted further study on its feasibility. In recent months, it has been reported that the project's EIA had been approved (*Star* (Malaysia) 2005). Thus, it appears that the project will go ahead as planned. The lesson to be learned here is that when protected areas are established, a significant buffer zone must be created around them as well. In the case of marine parks, the surrounding islands and coastal areas should also be gazetted as one coherent entity. Otherwise, the parks risk being threatened by development in nearby terrestrial areas. The whole problem in Tioman arose because the marina was to be built on state land, over which the federal agencies had no authority. At the same time, there was little consultation with the Fisheries Department as well as environmental groups and local residents over the possible impact on the

marine ecosystem. This is a classic instance of conflicting policies not only between centre and periphery, but between different agencies at the central level as well.

The authority over the marine and terrestrial components of a protected area should preferably be reposed in one single agency. Here, the experience of Sabah is instructive – Sabah Parks has the mandate to control activities both in the terrestrial and marine portions of its marine parks. This arrangement provides more effective protection against pollution coming from land, compared to the situation in the Peninsula (ASEAN Regional Centre for Biodiversity Conservation 2002). There is also the critical issue of enforcement. The protected areas like Pulau Redang and Tioman marine parks, while federally gazetted, remain within the control of the state governments as regards actual enforcement against violators. Often, the state governments do not possess the technical, financial and manpower capacity to undertake proper assessment, monitoring and enforcement action.

Both the federal and state authorities must thus step up efforts to improve the human and technical resources for enforcement at the ground level. PERHILITAN and the Forestry Department, for instance, are severely short-staffed and can only provide general guidance to their state counterparts. The latter, in turn, often have too many areas and issues under their jurisdiction to pay sufficient attention to all concerns. In some cases, senior officers in the state forestry departments are actually federal employees who have been seconded to the state for a period. The staff they administer such as the forest rangers that carry out enforcement duties are employees of the state.[35] They may thus have different priorities to pursue. In any event, it has been noted that once senior officers are seconded to the states, they typically become subject to the influence of state politics and may thus lose their independence and effectiveness as federal officers (Traffic International 2004).

A related issue in the management of protected areas is the EIA process. As stated earlier, EIAs are prescribed under the federal Environmental Quality Act (EQA) for certain projects (in the Peninsula) with possible impact on protected areas. The problem is that this requirement applies only to national parks and national marine parks, and not to state-designated parks and reserves. The only exception is where logging or conversion of forest land is proposed in areas adjacent to state parks.[36] For other activities threatening state parks, no EIAs are apparently needed.

In recent years, the Malaysian federal government has signalled several policy changes in an effort to strengthen the EIA system. First, the government announced in 2003 that all projects in sensitive highland and island environments in the Peninsula will henceforth require the approval of federal

authorities, despite their being on state land. This step was taken after developers indiscriminately cleared vast tracts of land in highland and island ecosystems. This marks the critical first step toward a more coherent conservation policy at the federal/national level, given that the ecosystems of several important sites had already been compromised by the inaction of the states.

Indeed, the policy of obtaining federal approval should be extended beyond highland and island environments to all protected areas that are facing threats, including PFE protected forests that face degazetting. Similarly, any project on islands or coasts that could prejudice a nearby marine park should obtain federal approval as well. Such a move does not mean that the nation's protected areas should be transferred to the federal authorities overnight. If anything, it should simply serve to warn the individual states that if they do not pay sufficient attention to their protected areas, then the federal government might just step in to do the job.

Another policy change being proposed relates to EIAs for smaller-scale forest clearance and development projects. The EQA's implementing legislation currently requires EIAs where conversion of hill forest land to other land use covers an area of 50 hectares or more.[37] There have been proposals made to lower the limit to 20 hectares (*Sun* (Malaysia) 2005).[38] This change is primarily aimed at developers who circumvent the law by breaking up their projects into smaller parts that are individually below the prohibited 50-hectare limit (Traffic International 2004). However, environmentalists have warned that such a change would not redress the systemic flaws in the EIA process, which include inadequate monitoring of projects by state authorities to ensure compliance with EIA conditions and requirements (*New Straits Times* 2005). In any event, a simple lowering of the limit will not prevent developers from parcelling out their projects in 20-hectare blocks instead.

Overall, the EIA process in Malaysia suffers from several shortcomings. Logging or land clearing operations have been known to proceed without an EIA ever being undertaken, showing a blatant lack of enforcement on the part of relevant authorities (Traffic International 2004). There have also been reports of EIA consultants being influenced and paid by developers to arrive at a particular recommendation. Another criticism relates to the lack of participation afforded to local communities. This is true whether or not an EIA is commissioned; often, there is lack of consultation even when this is required by the EIA legislation. As far as the gazetting of national parks or forest reserves is concerned, there is typically no consultation with indigenous inhabitants living within or around the area. This has led to disputed boundaries in parks such as Taman Negara (Raman 2002). By the same token, whenever a state degazettes a

protected area, it does this at its own discretion without consulting either with local communities or federal agencies.

Comparing centre–periphery relations in Indonesia and Malaysia

As examined above, the protected areas system in Indonesia and Malaysia reflect different systems of governance as well as different kinds of political constraints faced. To some extent, the Malaysian protected areas face less intense stresses as a result of better enforcement against encroachment. The population density around the protected areas is also far lower than in Indonesia, where a large number of local communities live around and off the protected areas. Malaysia is also more developed economically with lower levels of unemployment. At the same time, the forestry sector sustains a smaller portion of the population than in Indonesia.

That said, the relatively less serious threat to the Malaysian protected areas cannot be ascribed to a superior governance system. As detailed above, the federal system in Malaysia has actually created a fractured management apparatus, with the states having the potential to thwart national conservation policies. Since the states have ultimate competence over land and forestry matters, they can easily compromise protected areas by allowing forest clearing and development right up to their perimeters. In many states, this has actually occurred, including in marine parks.

In any event, the designation of protected areas is very much a state matter – the federal government has had little success convincing states to establish national parks under federal legislation. The protected areas that exist are actually state parks or reserves, or protected forests within the state's permanent forest estate. These areas can be degazetted at the state's will without having to seek federal permission. Thus, while Malaysia is fortunate not to experience illegal logging problems to the scale of Indonesia's, there exist major threats in the form of developers or politicians lobbying state governments to allow development projects either in or around protected areas.

At the same time, the federal government in Malaysia has been relatively successful in keeping the states in check through financial allocation. The states contribute a significant percentage of their natural resource revenues to the national coffers, and are allocated funds for development in return. In this way, the richer states actually subsidize development in the federal territories as well as the poorer states. The federal government can thus influence state policies, to a considerable extent, through the fund allocation mechanism. In any event, all the Malaysian state governments, save Kelantan state, are formed by the same

political party that constitutes the federal government. In fact, the dominant Barisan Nasional (National Front) party has traditionally ruled all the Malaysian states since independence in 1957, save for several periods when a small number of states fell to the opposition. The federal government is thus able to exert a measure of consistency in state policy through party discipline.

This is not to say that federal–state problems do not arise; they do, in fact, quite frequently, but the federal government is usually able to resolve differences amicably. The problem is that these agreements are often reached out of the public eye, and the media and NGOs have not been very successful in uncovering whether the compromises are ultimately in the public interest. The experience in Malaysia shows that while the law may pose federal–state challenges, the federal government can resort to extra-legal measures to overcome state intransigence. While capable of producing positive results, such an approach is also problematic in that it does not promote transparency in decision-making.

The situation in Indonesia is, of course, far more complicated. This is a much bigger country, where forests are cleared not so much for development or settlement but for huge timber revenues alone. On paper, the governance system for protected areas appears to be more straightforward (and even more promising) than in Malaysia, with the central government having clear competence over conservation areas such as national parks. Thus, one would have thought that the protected areas would have been far more secure, provided that the central government has its conservation policies right. The reality, however, is clouded by weak central control and endemic corruption in the regions.

Thus, as detailed above, protected areas in Indonesia have been under severe stress from illegal logging and poaching for many decades. During the Suharto era, illegal logging activities had to be channelled through selected conduits, namely the cronies of the Suharto family. In a perverse way, the situation was actually kept in relative check by strong and often repressive central control. Typically, military enforcement could be relied upon to rein in the regions and to enforce Suharto's interests. The situation has, of course, deteriorated since the introduction of regional autonomy. The documented result has been forest mismanagement, illegal logging and protected-area encroachment to degrees never witnessed before. The various provinces (and particularly the empowered regencies) are now the new loci of authority, ripe for cultivation by business interests. In the absence of central control, there is no longer any semblance of uniformity in the way the regions are run. As far as the forestry sector is concerned, every regency now has its own voice and does as it pleases. Unlike in Malaysia, the cash-strapped central government in Jakarta is less able to wield control through financial allocation. Neither can

party discipline be imposed, given the fragmented division of power among the myriad political parties.

In conclusion, it can be appreciated that the fates of protected areas in Indonesia and Malaysia reveal some disturbing similarities even within the vastly differing political and legal landscapes. The primary common feature is the weakness of central control and the sovereignty of local units. The big difference, however, lies in the fact that local unit autonomy in Malaysia has long been a stable constitutional feature. In this context, the federal government has simply resorted to devising extra-legal means of ironing out the kinks in federal–state relations, with some measure of a stable negotiated compromise emerging in the process.

In Indonesia, however, local unit autonomy has only recently been thrust onto the political landscape with the sudden collapse of centralized control. For the most part, the regions are ill-prepared to assume the great responsibility that comes with increased authority. In many instances, local governments do not possess adequate resources and manpower to conduct proper natural-resource and protected-area management. At the same time, the cancer of corruption remains pernicious; worse, it has now infiltrated the regions on the back of regional autonomy. The result is startling: serious forest mismanagement, rampant illegal logging and severe stresses on the protected areas system, all to degrees more acute than ever before. The prognosis for the future of protected areas in Indonesia is bleak; in the greatest of ironies, it would appear that what is needed now is stronger centralized supervision, but with the participation and cooperation of provincial and regency governments. It is absolutely imperative for these local actors to possess or be given the incentives to stem out illegal logging and encroachment into protected areas. At the same time, they must be convinced of the need to overcome the systemic problems of corruption and forestry mismanagement. That is a tall order; if it is ever to be achieved, it will have to be through a massive coordinated effort among all stakeholders, including the central government, the regional governments, private industry, international donors as well as the media and civic groups.

Summary

This chapter analyses the legal, administrative and institutional uncertainties affecting the management of protected areas and national parks in Indonesia and Malaysia. In particular, it assesses and compares the tensions between central and regional governments in the context of Indonesia's fledgling regional autonomy movement and Malaysia's federal–state system of governance. The impact that these tensions have on protected-area management is

examined, with prescriptions provided for greater coordination and cooperation between central and local agencies.

End notes

1. The collective term 'regions' (*daerah*) refer to all local government units, including provinces (*propinsi*), regencies/districts (*kabupaten*) and further smaller units such as the *kecamatan*, *keluharan* (subdistricts) and *desa* (villages).
2. See Government Regulation PP 104/2000 on Distribution of Revenues and Law UU 33/2004 on Fiscal Balance between the Central Government and the Regions.
3. Art. 1, Law UU 41/1999 on Forestry.
4. Art. 7, Law UU 41/1999; Arts. 6–8, Government Regulation PP 34/2002.
5. Art. 4(2), UU 41/1999.
6. Arts. 4(3), 5(3) and 37, UU 41/1999. Art. 4(3) is ruthlessly clear (rare for Indonesian legislation!) – the rights of customary communities will be upheld 'if they actually exist and are recognized as such, and do not conflict with national priorities'.
7. See the hierarchy of laws laid down in 2004 by UU 10/2004 on Legal Regulations. This replaces the previous hierarchy established by Decision TAP No. III/MPR/2000 of the *Majelis Permusyawaratan Rakyat* (People's Consultative Assembly).
8. The proposal was a political response to a devastating mudslide and flood in Northern Sumatra in November 2003, near the Gunung Leuser National Park. The momentum for the proposal has since been lost, and the law appears unlikely to be enacted.
9. EIAs (better known by its Indonesian acronym AMDAL) are governed by the 1997 Law on Environmental Management (UU 23/1997) and its implementing regulations, principally PP 27/1999 on Environmental Impact Analysis.
10. In August 1999, the Indonesian NGO Telapak, together with the international NGO Environmental Investigation Agency (EIA), launched a campaign against illegal logging in Tanjung Puting and Gunung Leuser National Parks. The two NGOs released reports (Newman *et al.* 1999) revealing the terrible extent of illegal logging in the two national parks and the forces behind this rampant practice.
11. It must be remembered that local communities are employed as illegal loggers in many of these areas, e.g. in Bukit Barisan National Park in Sumatra (Indrawan 2005).
12. The PFE concept is laid out in the National Forestry Act of 1984 and also appears in the Sabah Forest Enactment of 1968 and the Sarawak Forests Ordinance of 1954. However, the PFE's implementation in Sabah and Sarawak is undertaken by the two state governments independent of the federal government.
13. Article 75, Federal Constitution of Malaysia. Note that under Article 76, Parliament can legislate laws even for areas falling within the State List for the purpose of implementing international agreements, promoting uniformity of the laws of two or more states or if requested to do so by a state legislature.

14. See List IIA of Schedule 9, setting out additional matters for the Sabah and Sarawak State Lists.
15. The NFA was a result of the adoption of the National Forest Policy (NFP) in 1977. The NFP was applied only to Peninsular Malaysia, even though Sabah used it as a template for its own policy revisions. Similarly, Sarawak applies its own state forest policy, even though parts of it bear resemblance to the NFP.
16. The MPI has been reconstituted as the Ministry of Plantation Industries and Commodities (MPIC). It, together with agencies such as the Malaysian Timber Industry Board (MTIB), are concerned with downstream activities such as the commercial development and marketing of primary resources, including timber.
17. The MNRE was created following the general elections of March 2004 out of the environmental portfolio of the Ministry of Science, Technology and Environment. It incorporates competence over natural resources previously held by the Ministry of Primary Industries (now MPIC), and centralizes all functions relating to pollution control, environmental protection and natural resources. Its competence includes forestry and wildlife management, national parks and the marine, highland and riverine ecosystems.
18. The park (a relatively small one by Malaysian standards) was gazetted in 2003, more than 20 years since the NPA was adopted.
19. The term 'Taman Negara' is apt to confuse – in Malay, it means 'National Park', but it is also the name for the national park constituted by the Pahang, Kelantan and Terengganu state enactments. In other words, this park has no specific name to distinguish it from other '*taman negaras*'. To add to the confusion, it is not constituted under the National Parks Act of 1980 (also known as the Taman Negara Act!), but the state enactments of Pahang, Kelantan and Terengganu. Taman Negara was first designated in 1939 by the British colonialists as the King George VI National Park. Its 434 340 hectares of lush rainforests are amongst the finest in the world.
20. Enactment Taman Negara (Pahang) No. 2 of 1939 (in force in Pahang), Enactment Taman Negara (Kelantan) No. 14 of 1938 (in force in Kelantan) and Enactment Taman Negara (Terengganu) No. 6 of 1939 (in force in Terengganu). However, the (federal) Wildlife Protection Act No. 76 of 1972 is applicable to the whole park.
21. Royal Belum had been one of the original 11 areas identified by the Third Malaysia Plan for designation under the NPA.
22. Licensed hunting may be granted in the former, whereas the latter provides total protection to wildlife.
23. Malaysia also has a number of protected wetlands designated under the 1971 Ramsar Convention on Wetlands, notably Tasek (Lake) Bera in Pahang state. There are also three new Ramsar sites in Johor. Most key wetland sites in Malaysia are found within the permanent reserve estates (PRE), and thus lack protection from degazetting.
24. The Forest Enactment of 1968 was amended in 1984 and 1993.
25. Other relevant Sabah state legislation include the Environment and Conservation Enactment of 1989 and the Sabah Biodiversity Enactment of

2000. The latter is not fully implemented yet.

26. The Forests Ordinance was revised in 1997 and further amended in 2001. A related piece of legislation is the Sarawak Biodiversity Centre Ordinance of 1996. The state's Ministry of Planning and Resource Management also oversees a body known as the Natural Resources and Environment Board (NREB), constituted under the Natural Resources and Environment Ordinance of 1993. The NREB draws representation from various state ministries and is tasked with formulating environmental policies for the state. At the same time, it administers the environmental impact assessment (EIA) system for Sarawak. In this regard, the NREB has taken on a greater role than the state's Ministry of Environment and Public Health (MEPH), whose minister is actually the chairman of the NREB. The MEPH appears to be more active in public health matters.
27. There is also the Sarawak Timber Industry Development Corporation (STIDC), which controls the logging and timber policies of the industries in Sarawak.
28. The SFC's website claims that its Protected Areas and Biodiversity Conservation Unit is the custodian of Sarawak's national parks, other protected areas and protected species and wildlife in general, see http://www.sarawakforestry.com/htm/business_units/protected_area.htm (accessed 18 December 2005).
29. There are currently sixteen national parks, five nature reserves, four wildlife sanctuaries and two wildlife rehabilitation centres. Mulu National Park is also a UNESCO World Heritage Site.
30. International Tropical Timber Organisation.
31. Another proposed TBCA is the Pulong Tau National Park in Sarawak and the Kayan-Mentarang National Park in East Kalimantan, Indonesia.
32. See Sections 7 and 11, National Forestry Act, for state authority to gazette and degazette. The conditions include consultation with various agencies, but these are seldom adhered to strictly. There are also clauses in the National Forestry Policy allowing degazetting only under 'the most exceptional of circumstances' and 'after the most careful objective study'. However, there is no consensus on what these terms mean.
33. Nine of the Malaysian states (all in the Peninsula) have hereditary Malay rulers who still wield huge influence over their states' affairs, particularly land, natural resources and religion. Many project developers have links either to state government leaders or members of the royal families.
34. See, for example the National Integrated Protected Area System (NIPAS) Act of the Philippines.
35. This arrangement is unique to Peninsular Malaysia. There is no equivalent secondment process for Sabah and Sarawak, which deal exclusively with their own forestry and protected-area issues.
36. Item 6, Environmental Quality (Prescribed Activities) (EIA) Order 1997.
37. Item 6, Environmental Quality (Prescribed Activities) (EIA) Order 1997.
38. The proposal arose as a result of the controversy

surrounding the Bukit Cahaya development project (see Bettinger, Chapter 25). In 2003, there had been an earlier proposal to subject *all* land development projects involving forest clearing or logging to the EIA process, irrespective of the area covered. That proposal did not appear to have been taken up.

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25

Protecting sovereignty versus protecting parks: Malaysia's federal system and incentives against the creation of a truly national park system

KEITH A. BETTINGER

Introduction

The language of protected areas in Malaysia is a confusing one; the nature of Malaysia's federation and the historical development of state-centred control over land and forest resources have ensured that protected-area planning would, for the most part, be a localized and uncoordinated affair from the very beginning of the nation's founding.

The Malay sultanates that were the precursors of modern Malaysian states evolved along rivers and were very mobile in response to threats from invaders. This is a reflection of the Malay world's amalgam of groups that have migrated and invaded throughout the archipelago. These various migrations and invasions shaped the face of the sultanates. Power, influence and control were never tied to specific areas, but were rather founded upon relationships, beliefs and practices. Therefore a sultan's power survived temporary dislocations and could be relocated further up the river if need be. It is no coincidence that the major rivers of the Malay Peninsula share their names with the various sultanates.

As the British expanded their control over what would become Malaysia, the sultanates enjoyed a certain degree of security, although their sovereignty was gradually eroded. Royal courts settled down in the cities where the colonial

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authorities set up local administrative centres. This contributed to state identity and eventually spatially demarcated and bounded states developed.

The sultans and the states found this arrangement agreeable, and it persisted after independence, with a strong delineation between state and federal powers being enshrined in the Constitution. Forests are for the most part the property of the state, and have been used for political patronage and economic development. Their economic and political significance at the state level has undermined attempts to create a system of centrally administered national parks, and state resistance has helped to keep the federal Department of Wildlife and National Parks a relatively weak institution.

This situation benefits state-level political and economic interests and is not likely to be changed in the foreseeable future. While conservation policies have some constituency among the public and in the government, conservation is and will continue to be subservient to developmental goals. This reality hinders conservation planning in Malaysia and makes coordination an almost impossible task. Thus, while it seems easy to create plans, such as the national biodiversity strategy or the national ecotourism plan, there are formidable obstacles coming between planning and implementation.

Forest resources and historical antecedents

Malaysia is an interesting country because it is home to several of the last surviving monarchies in the world.[1] These monarchies go back beyond the Melaka sultanate to the Hindu-Malay empires of Majapahit and Sri Vijaya (Harding 1993). The sultans are popular throughout Malaysia and enjoy public veneration and respect amongst the rural Malay population. However, throughout their history the various sultanates have been threatened from several quarters, and their futures have been in jeopardy on more than one occasion.

As the various sultanates and kingdoms developed in the Malay Peninsula, they were based along the many rivers, and hence were somewhat mobile and were from time to time uprooted in response to threats. Kathirithamby-Wells writes that development in the Peninsula differed from India and China because the latter two regions developed on a single landmass, whereas the Malay sultanates grew along 'riverine configurations with dendritic patterns of human settlement' (Kathirithamby-Wells 1995:29).

Kathirithamby-Wells (1995:28–29) further argues that

> The perception of the Southeast Asian ruler as lord of 'land and water' effectively included control over people, as evident in the Malay term

> *tanah air* ('land and water'), embodying the concept of 'country' or 'nation'…With no fixed boundaries, the physical limits of the state, effectively the 'area of influence' or *mandala*, were determined by the extent of resource control exercised by the ruler, through a chain of loyalties spreading outwards from the centre and fading out gradually towards the fringes. In Southeast Asia, where the river systems served as the main means of communications, the network of loyalties and commercial exchange within the valley configuration of the *mandala* converged at the riverine or coastal capital.

In the Malay Peninsula, however, this must be understood in the context of the basic mobility of the rulers and centres of power. This suzerainty over resources was not tied to a particular location, but was more applicable to the products of the forest as well as the inhabitants. There is no evidence that the pre-colonial Malay sultans directly controlled specific forest tracts, as their hold over the interior was tenuous at best (Peluso & Vandergeest 2001). It was common for taxes to be levied on forest products, and some products such as camphor, bezoir stones, tusks and gold, became royal monopolies (Kathirithamby-Wells 1995). These products were also important material for tribute to the rulers of China and various European courts, and probably served to cement the position of the aristocracy in the Peninsula. Power in the Malay world was traditionally derived from control of trading routes and entrepots, and good relations with India, China and the Middle East were essential for the ruling elite.

The ties and rights to forests as geographical places, though, was a concept that the colonial powers imposed upon their charges in Southeast Asia. This process began in earnest in the nineteenth century in Malaya as the British expanded their influence from the Straits Settlements of Penang, Malacca and Singapore. Industrialization as well as resource extraction depended on products from the forest; for example, tin mining and the rubber industry both depended on wood for fuel (Peluso & Vandergeest 2001). The resources of Malaya were also needed to fuel industrialization in England, and into the twentieth century, rubber from Malaya contributed to the automotive boom in Europe and North America. Peluso and Vandergeest (2001:777) describe the process that solidified sedentary regional elites' control over forests:

> The debate that effectively settled the issue of local property rights took place prior to the formation of a forestry department; thus the key protagonist did not include foresters as in India, but the chief colonial administrators in charge of different states. On one side, Frank Swettenham, then British Resident of Perak, argued that Malayan rulers

> had no tenure at all… On the other hand, W.E. Maxwell, then British Resident of Selangor, drew on Indian sources of various kinds combined with old Malay textual references to the introduction of Hindu and Muslim law from India into the Malay States for his famous statement on 'Malay Land Tenure.' (1884). He also cited Raffles' 'discovery' of principles of the sovereign's land tenure in Java (1883, 90–4) to argue that 'property in the soil is vested in the Raja of the country' and that 'the occupier has only the usufruct…or the right of possession as long as the land is kept under cultivation, the usual taxes paid, and the usual [corvee] services rendered'…His tour-de-force was his use of the colonial foresters' argument about shifting cultivation…Maxwell's position won over that of Swettenham, in turn providing the basis for the forestry department's strong claims on forest territory and products.

These arrangements spread to the unfederated Malay states as well as the sultans saw how lucrative control over geographically defined forests could be. The concepts of domain, the Torrens system,[2] and other alien ideas of land tenure and title would change the political and economic landscapes of Malaya.

Harding (1993) explains that the sultans supported the Japanese during the Second World War, which further solidified their position as agents of the invading masters. However, in the post-war period with independence from England imminent, the sultans' places were not certain. For the most part, the sultans allied themselves with the United Malay National Organization (UMNO), which became (and still is) the dominant party in the newly independent Malaysia. Since many of the UMNO leaders were from aristocratic backgrounds in the first place, allying with the sultans seemed natural. Furthermore, this association helped to improve UMNO's credibility amongst rural Malays at a time when there were other groups competing for their support. The sultans have been, through various treaties of acquiescence and political alliances, able to cling to their positions of regal privilege. Throughout the British colonial period there were moves to create centralized authority, most notably with the creation of the Federated States of Malaya in 1895 and the proposal of the Malayan Union in 1946, but the sultans and local elite resisted such moves.

Malaysia is now characteristic of a pattern in Southeast Asia in which control over forest resources is vested in the regional authorities, be they in states or provinces, rather than in the central government, hence forests and forest resources are integral parts of local and regional political calculus (Contreras *et al.* 2001). In these cases conservation is often imposed from the top down.

The departure of the British created a vacuum. The harmony of goals between the federal and state administrators was replaced by a state/federal rivalry, which required duties and privileges to be set out in writing. The states saw forests as their property. In addition to this, however, is the perception on the part of the federal government that forests are for the development of the nation as a whole; many federal policies have centred on converting forests to 'productive uses', and thus conservation and protection have not been at the top of the list in terms of national priorities. This is characteristic of other nations in the region as well: 'the over-riding pressure for Southeast Asian nations to industrialize tends to prioritize one set of bureaucratic interests (economic) and responsibilities over another (environmental), and this is reflected in intrabureaucratic politics' (Hirsch & Warren 1998:17). As Brookfield *et al.* (1995:232) write:

> Already in colonial times the forests of the region had come to be perceived as an underdeveloped frontier region for the territories that became Indonesia and Malaysia, especially the former. In the 1950s both countries developed plans for settlement in these forest lands and, from the 1960s through the first half of the 1980s, the 'transmigration' and 'land development' programmes of Indonesia and Malaysia were pursued with great vigour. At the same time, they also provided infrastructure and encouragement for substantial numbers of unassisted migrants to participate in the development of these national 'frontier' regions.

The constitution, land and forests

The Malaysian Constitution in part VI discusses the division of powers between the state and federal governments. The Constitution's Ninth Schedule divides the various responsibilities, privileges and jurisdictions into three lists: the Federal List, the State List and the Concurrent List. List A includes federal powers. List B, the State List, includes agriculture and forestry (item 3). Protection of wild animals and wild birds, as well as provisions for national parks are covered by item three on List C, the Concurrent List. The Constitution also sets out special privileges and rights for the East Malaysian states of Sabah and Sarawak. Thus, there is built-in confusion when it comes to conservation and environmental matters.

Under the Constitution, every state is independent and in most cases federal legislation is not binding. The federal government often serves as a coordinating entity, though under the constitution the federal government is empowered to make laws it deems necessary to ensure continuity throughout the country.

Related laws and ordinances

For conservation and land issues, it helps to deconstruct Malaysia into its constituent parts, namely Peninsular Malaysia, Sabah and Sarawak.[3] Each of these regions should be seen as a separate nation (for lack of a better term) in terms of conservation and land because each is governed by different laws.

The Peninsula

One of the most important pieces of legislation in Peninsular Malaysia is the National Land Code Act of 1965. This act applies only to the Peninsula and deals with matters of tenure, title and land transfer. Under the act, authority over all land, mineral and rock material is given to the states. Also important is the Protection of Wildlife Act of 1972 (Act 76). When this law was passed it created the power to designate Wildlife Reserves and Sanctuaries, but not National Parks. Wildlife Reserves and Sanctuaries may be declared by the states under this legislation. In 1984 the National Forestry Act was passed, which establishes the Permanent Forest Estate (PFE) and provides for the management and conservation of forests in the Peninsula.

Lastly, national parks are governed by Act 226,[4] the National Parks Act, passed in 1980 as 'an act to provide for the establishment and control of National Parks and for matters connected therewith'. When this act was passed, it was anticipated that some national parks would be established; areas under consideration included Ulu Muda Wildlife Reserve, Sungei Nenggiri Wildlife Reserve, Bukit Kutu Wildlife Reserve and Sungei Dusun Wildlife Sanctuary. The Malaysian Nature Society, an influential non-governmental organization (NGO), had been lobbying for the passage of the act for years; in 1974 they published 'Blueprint for Conservation in Peninsular Malaysia' which included 70 areas recommended for conservation in the Peninsula alone. In the Third Malaysia Plan, the government for the first time in its history included 22 areas to be gazetted, including two national parks and five nature monuments (Leong 1984). One observer noted that 'the National Parks Act was widely considered as the most significant development in the conservation of natural areas in West Malaysia' (Hasan *et al.* 1997:12). Conservationist organizations at the time believed that the reason for the dearth of parks in the Peninsula could be traced to the fact that the legislative tools were lacking (Leong 1984). Passage of the National Parks Act was thus a sort of holy grail that would enable the gazetting of numerous national parks. The passage of the act was a long process, as it was originally proposed in 1969 (Bulan 1981). The language of the act provides for a great deal of flexibility and it appears that the

law could be applied to any one of the IUCN definitions of protected areas[5] (Anon. 2001):

> The object of the establishment of National Parks is the preservation and protection of wild life, plant life and objects of geological, archaeological, historical and ethnological and other scientific and scenic interest and through their conservation and utilization to promote the education, health, aesthetic values and recreation of the people.

The law states that the state authority should reserve land at the request of the minister.[6] Once land is gazetted, it is placed under the supervision of a National Park Committee. This committee consists of the state secretary of the state(s) in which the park is situated, the Director of Land and Mines of each of the states, and other federal and state government representatives seen as appropriate. The park cannot be degazetted by the state unless the minister approves. The law also provides for a National Parks Advisory Council to advise the minister on matters regarding the national parks. This includes representatives from each of the states in which a park or part of a park exists, representatives from the Treasury, the Tourist Development Corporation, the Department of Forestry and the Economic Planning Unit. There are also discretionary spaces on the committee.

As mentioned above, when the law was passed it was expected that some parks would be created, but the act has been used only once since its promulgation: in 2002–3 for the gazetting of Penang National Park. Bulan (1981) writes that Endau-Rompin was one of the main targets for the legislation,[7] and the third Malaysia Plan (1976–1980) expressly stated that Endau-Rompin would become a national park. However, the Endau-Rompin affair became a fiasco and highlighted all the difficulties entailed in creating a true national park in Malaysia. Endau-Rompin straddles the border between Johor and Pahang states. Much has been written about the immense biodiversity and presence of flagship mammals in the area. Furthermore, until recently, the true extent of Endau-Rompin's natural wealth was unrealized, as it is very remote. Thus, the federal government viewed it as an ideal location for a national park. The state governments, however, disagreed, as Endau-Rompin was providing logging revenue. In 1977, for example, the state of Pahang leased 30000 hectares of the 97000 hectares of core area lying within its territory for logging. As the act worked its way through the process of approval, 'loggings operating in the proposed area alarmed by the public outcry and fearful that the state government [would] revoke their licenses stepped up their operation and were working day and night' (Bulan 1981). The

state's view towards the creation of the national park are summed up in the comment made by Pahang State Secretary Datuk Wan Sidek bin Wan Abdul Rahman: 'The Pahang State government does not object to the setting up of a National Park but only after the state has fully exploited its economic potential' (*New Straits Times* in Bulan 1981).

For over 20 years the situation persisted and no national park was gazetted. Most publications seemed resigned to the fact that the strong state position and bureaucratic inertia, as well as the obvious priorities of development in Malaysia would persist and no national park would ever be created.[8] While Sabah and Sarawak continued to gazette areas as parks, no parks were created in the Peninsula. However, in 2002, Pantai Acheh Forest Reserve was gazetted pursuant to the National Parks Act as Penang National Park (PNP) on 1182 hectares of land on the western side of Penang Island.[9] The Department of Wildlife and National Parks has set up some facilities there,[10] and is currently establishing a management plan for the park. Establishment of the park was the culmination of years of lobbying by various groups in Penang; the Department of Wildlife and National Parks (DWNP) website admits that PNP 'reflects the sensitivity of the Pulau Pinang State Government, Federal Government,[11] Non-Governmental Organizations and the local community on the importance of conserving this biological diversity rich area in a metropolitan area.' It is interesting to note that the state of Penang, which is known to be the most environmentally sensitive state,[12] was established as a straits settlement under treaty with the Sultan of Kedah and hence has never had a Sultan of its own. It is, for all intents and practical purposes, a colonial invention.

The Peninsula's flagship park, Taman Negara, is not covered under the 1980 Act, and under the strictest definitions should not be considered a national park. It was gazetted under three separate state Acts in 1938–9, which covered each of the three states covered by Taman Negara, i.e. Pahang, Terengganu and Kelantan.

Sabah

Sabah currently has six parks covering 263976 hectares, or about 3.6% of the land area. The parks represent a range of the ecological habitats in Sabah, including marine, coastal, lowland, montane and subalpine (Nais & Ali 1991). National parks in Sabah became legally possible with the passage of the National Parks Ordinance (#6) in 1962. This legislation marked a turning point in the management of Sabah Parks because up until 1964 the parks as well as the management of wildlife had been under the authority of the state's Forestry Department. This legislation enabled the establishment of Kinabalu National

Park in 1964 and Tunku Abdul Rahman National Park in 1974.[13] The 1962 Act was repealed and replaced by the National Parks Enactment in 1977, which included the management of nature reserves, and this was repealed and replaced by the Parks Enactment of 1984 (Ali & Nais 1996). Under the last enactment, all Sabah national parks were redesignated as state parks (Nais & Ali 1991). The enactment vests in the board of management the power to conserve and protect parks and forest reserves (Tuboh *et al.* 1998). The board of trustees is under the jurisdiction of the state Ministry of Tourism Development, Environment, Science, and Technology. Funding comes from both the state and federal governments. The federal government funds development projects, such as infrastructure upgrades, whereas the state is responsible for management and operations (Ali & Basintal 2002). In the mid 1990s, park facilities were privatized.

Sarawak

Sarawak's national parks and wildlife reserves fall under the authority of the Sarawak Forestry Department, but management is the responsibility of the recently incorporated Sarawak Forestry Corporation (SFC), a private entity owned by the state of Sarawak. The corporation's website advertises Sarawak's system as 'one of the most extensive networks of protected areas in Southeast Asia'.[14] The legal framework for parks establishment is the National Parks and Nature Reserves Ordinance of 1998.

There has been a flurry of gazetting in Sarawak over the past two decades, and there are now 16 'national' parks, including marine parks. However, the area covered is under 5%, although the Sarawak Forestry Corporation says it has a goal of 10%. Most of Sarawak's parks are under 10000 hectares, and 5 of the 16 parks are under 5000 hectares. Additionally, Sarawak's parks are administered by the same institution responsible for extraction, which could lead to policy conflicts.[15] However, the state of Sarawak has been the leader in Malaysia in terms of gazetting protected areas and marketing its ecological resources for tourism.

International agreements

Malaysia has been a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora since 1978 and is also party to the United Nations Framework Convention on Climate Change and the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

The current situation

It is in this milieu that conservation tries to spread roots. In Malaysia, forests have political significance because of their economic value. Forests, as Leigh writes, are 'unambiguously under the control of state or regional-level political authority and [are] not in the hands of the central government of Malaysia'. (Leigh 1998:94). As forests and land fall under the states according to the Constitution, they are an important part of state economies. Timber royalties help fund state politics, especially in Sarawak, where there has developed a sort of spoils system, as Leigh (1998:101) notes:

> There is a clear and overriding rationality to the process of timber extraction, driven by the huge financial rewards derived from this most valuable and readily available natural resource. The benefits have accrued primarily to those who have the power to allocate, to harvest and to market timber, and the gains have been on behalf of their companies, their parties or themselves. What has made the whole process politically sustainable is the extent to which broad sectors of the rural population have gained some reward, meagre and short-term though it may be, and the closure of avenues to articulate the long-term costs of such rapid exploitation.

This situation is not confined to Sarawak, as forest rights are important patronage resources throughout Malaysia. One of the best examples of the connection between forests and politics came from the state of Kelantan in the 1970s, when Asri Muda, Chief Minister and then Land and Rural Development Minister used his offices to develop a political machine that allegedly enriched himself, his family and his cronies. Noor (2004:276) describes some of the most egregious of the scandals that would mark Asri Muda's political career in Kelantan, including the leases of hundreds of thousands of acres of land to timber and mining concessions with connections to Asri or his family.

This neo-feudal arrangement characterizes forestry politics in many tropical countries. Pressures on the forests spread beyond state interests as well, and conservation interests within the government must compete against myriad other ministries and bureaucratic organs interested in agricultural and industrial development. The Ministry of Agriculture and Agro-based Industry, the Ministry of Rural and Regional Development, and the Ministry of Plantation Industries and Commodities all have agendas for opening up forests areas (Jomo *et al.* 2004). Furthermore, the Agriculture Bank and the People's Co-operative Bank provide financing for rural development (Jomo *et al.* 2004).

Conservation of forestlands is left up to the states, but there is a certain level of federal coordination of these within Peninsular Malaysia; however, there are separate Forest Departments overseeing the forests in all three aforementioned regions (Sabah, Sarawak and Peninsular Malaysia) (Gillis 1988). Revenue from forest royalties in Sabah and Sarawak goes directly to the governments of these states and not the federal government (Gillis 1988). Even in the Peninsula, the National Forestry Department has mainly an advisory role in relation to the state governments. Forests in Peninsular Malaysia are classified under the heading Permanent Forest Estate (PFE) which includes protection and production forests. The various classifications can be gazetted and degazetted at the state level for any number of reasons, and so conservation is not guaranteed permanence.

Although the DWNP has created a protected areas strategy for the Peninsula, forests remain essentially political throughout the country. Leigh (1998:99) discusses the connection between logging and politics in Sarawak:

> The whole process of being granted a timber license and being named as contractor is dependent upon one's links with the top state-level political leadership. That is not institutionalized, hence unpredictability reigns. Uncertainty is exacerbated by the existence of regular contested elections. Enormous financial resources are deployed to fight those contests. In the key 1987 election, fought over the right to allocate the spoils of office, some US$40 was spent per voter. In a constituency of one Deputy Minister, he acknowledged spending more than RM2 million for his campaign. A reciprocal relationship exists between the timber tycoons and the top party leadership at those times, for each needs the other's help.

Although there are parks at the state level, the management and commitment to them varies from state to state. Furthermore state parks are not established permanently; it is merely a state matter for parks and other protected areas to be degazetted at the state level. Laws that require degazetted areas to be replaced are not enforced. For example, on the Peninsula in Kedah state, the 'rice bowl' of Malaysia, there are no green areas left to replace degazetted and deforested areas.[16] Degazetting usually happens at closed door meetings of the state forestry committee, which is run by the ruling party in all cases. There is no process of appeal or oversight; the only thing that can be challenged is the amount of remuneration in cases in which the state government appropriates private land.

There is a need for more totally protected areas in all three regions, as well as for the federal government to take the lead in establishing protected areas.

Representatives of NGOs point out that there are few leaders at the state level committed to conservation and that the political will is absent in most places to pressure politicians to pass conservation policies.

Weaknesses of the systems

Much of the difficulties with the current system are summed up succinctly by Dr P.R. Wyeherley of the IUCN, who was charged with creating a manual for conservation of resources in Malaysia:

> New enactments are in preparation for West Malaysia. It is desirable that general legislation covering all parks, reserves, and sanctuaries be drawn up using the best examples from East and West Malaysia and other countries as models. The practice of separate ordinances and notifications for each reserve has led to unfortunate, inadvertent omissions from the regulations of some of them…However, undoubtedly the weakest feature of the existing legislation in West Malaysia is the case with which reserves can be alienated by gazette notification and converted to other uses. It is essential that in future those reserves which are to be retained and the new reserves to be created should all be established by Acts of Parliament, so that their status would remain inviolate unless changed by another Act of the highest authority. (Wyeherley 1969:150)

Several of these concerns are as applicable today as they were in 1969. The various bureaucracies involved in conservation and protected areas result in a jumble in which a coherent plan of protection is all but impossible to conceive. Malaysia is often classified as a biodiversity hotspot, and the richness of species diversity ranks among the highest in the world. Furthermore, Malaysia is home to a wide range of ecosystems. However, several important ecosystems are underrepresented in the protected areas, including coastal dipterocarp forests, peat swamp forests, limestone flora, montane flora, lowland dipterocarp forest and alluvial swamps (SAM 2001).

As in many countries, legislation pertaining to land issues, the environment and conservation issues fall under the purview of different acts and are administered by unrelated bureaucratic organs. Research is complicated by the plurality of bureaucracies. Various agencies, including the Ministry of Science, Technology and Innovations, the Ministry of Plantation Industries and Commodities, and the Forestry Department have different responsibilities and interests, and thus they keep different numbers (SAM 2001). These difficulties are compounded by the fact that one must factor in Sabah and Sarawak as well,

which have equally convoluted classification systems. Sahabat Alam Malaysia points out that quality and quantity are very important when making research and policy decisions regarding biodiversity, but in Malaysia planning is hindered by lack of clarity. They have shown that, depending on various classifications, the area under protection in Malaysia ranges from 3 to 17% of the total land area (SAM 2001). They further describe difficulties:

> The Department of Wildlife and National Parks (DWNP) set about to define a National Protected Areas System in the 1990s for [Peninsular Malaysia; PM]. Not always in agreement with the Forestry Department, the DWNP admitted that regazetting, degazetting and double gazetting of protected areas has led to considerable confusion over the numbers. Under one scenario 5.7% of PM was declared as wildlife reserves, parks and other management categories; whereas in using World Conservation Union categories only 4.6% of PM qualifies as protected areas. (SAM 2001:41)

Because of the various authorities involved, there is confusion as to the status of some areas. Traffic, an international organization that monitors trade in wild plants and animals, reports that before 1996 cases of double gazettement between the Forestry Department and the Department of Wildlife and National Parks included nearly 120000 hectares. In most of these cases the land was managed as Wildlife Reserves by the DWNP, but was listed under the Permanent Reserve Forest by the Forestry Department, which suggested that they risk being degazetted by the states.

The states are more concerned with economic development than conservation, and the goals of development and conservation are currently mutually exclusive. The federal government also has a perverse incentive not to conserve, as it derives revenue from forest extraction. Whereas the states earn money for property taxes and other levies on private land, the federal government receives money from exports and income taxes (Jomo *et al.* 2004). Thus the federal government does not have a programme in place to compensate state governments for conservation. This is seen as a problem, especially when one of the main arguments for conservation and the establishment of protected areas is that they provide ecological services and other hard-to-value amenities to society. The Department of Wildlife and National Parks is kept weak, thus there is not much constituency in the government for conservation and for establishing more parks. Some of this probably reflects politics, as the forests need to be left in reserve for possible patronage, but also the fact that forest-based industrialization has been a key component in Malaysia's development strategy.

Traffic recommends that the totally protected areas of Malaysia be inventorized and reviewed at the national level, rather than by region, with a focus on wetlands (which are underrepresented in Malaysia's protected-area network) so that the system of protected areas can be integrated with the Permanent Reserve Forests. This would require a level of coordination and political will that currently does not exist. This lack of coordination hinders efforts to implement national plans, such as the biodiversity strategy.

Protected areas and indigenous groups

The lack of a central protected areas authority also impacts on Malaysia's indigenous groups. In many park systems around the world and also within the main current of literature on protected areas, the last several decades have witnessed an evolution from the exclusionist notion that national parks and protected areas must keep out indigenous inhabitants, to a more accommodating view that realizes that indigenous inhabitants are a part of the natural landscape. This trend is partially reflected in national policies that affect the way protected areas are gazetted and managed. Policies that take into consideration indigenous dwellers can be imposed from the top down, and necessary resources can (ideally) be channelled towards the implementation of responsible management. This often includes conflict resolution mechanisms, co-management practices, and other responsibility-sharing arrangements.

In the case of Malaysia, however, the absence of such legal and bureaucratic apparatuses prevent the adoption of a uniform approach to indigenous groups and conservation. This is a substantial void in a nation with dozens of recognized indigenous groups. Furthermore, indigenous groups are often at odds with the various governments, and until very recently, almost always got the short end of the stick when the governments needed their land.[17]

While recent court decisions have set important precedents and may be harbingers for different policies in the future, the preservation of indigenous cultures within the broader issue of environmental conservation is not an important focus in Malaysia. At sites in which indigenous peoples live in or in close proximity to the protected area, they seem to be viewed more as a curiosity rather than a part of the landscape (the Penans of Gunung Mulu, the Bateks of Taman Negara, the Jakuns of Endau-Rompin, for example). Thus the view of indigenous people is superimposed upon a more general view of nature, and the people and the place are still discrete entities. There is no movement on the part of any government to change the conception of protected area to one of protected landscape.

In addition, there is no national policy addressing the presence of indigenous people in protected areas. In most protected areas that overlap traditional

indigenous areas, there are ad hoc arrangements that do not provide for the long-term land security of the people.[18] The fact that the fundamental act of actually designating true protected areas in Malaysia is so difficult should give the observer an idea as to the extent of the dialogue on indigenous peoples and protected areas.

Bukit Cahaya

'To be pro-business and to have an environment-friendly policy is proving to be too delicate a balance for state governments to handle' (columnist Syed Nadzri, *New Straits Times*, 10 March 2005).

The recent controversy over the Bukit Cahaya Agricultural Park in the state of Selangor exemplifies many of the weaknesses in Malaysia. Although Bukit Cahaya is not a national park, it illustrates the conservation tug-of-war between the federal government and the states. Bukit Cahaya made the news in 2005 when it was revealed that land around the Bukit Cahaya Agricultural Park in Selangor was being degraded by private housing developments. The area affected was described in one report as '20 times larger than an average 18-hole golf course'. Construction was ordered to be stopped until the requisite environmental impact assessments (EIAs) were reviewed. The media understandably raised the question as to why development was allowed to proceed before the EIAs were reviewed. The Chief Minister of Selangor also announced that the companies responsible for the damage would be made to pay for the environmental damage wrought.

Of the more than 35 companies involved in the fiasco, only 9 were made to pay fines, and all the companies involved denied any wrongdoing. This suggests that events at Bukit Cahaya were merely business as usual for developers and the state government. Further supporting this conclusion was a flurry of stories that soon broke about encroachment and damage to other sanctuaries, reserves and parks including Ayer Hitam and Bukit Beruang Forest Reserves.

Eventually, the issue reached the prime minister, who was reportedly unhappy as Bukit Cahaya was only the most recent in a seemingly cyclical chain of events that starts out at the state level and then eventually draws national attention. For example, in 2003, the Cabinet had to intervene to stop helicopter logging in a catchment forest in the state of Kedah. In August 1994, on a trip to the northern states of Malaysia, former Prime Minister Tun Mahathir Mohammed happened across the site of indiscriminate land clearing in the state of Kelantan, and voiced his concerns over wanton environmental destruction. On Bukit Cahaya, Prime Minister Dato Seri Abdullah Ahmad Badawi expressed concern that while the national agenda for environmental protection was quite

explicit at the federal level, environmental issues were not conspicuous at lower levels of decision making.

Prime Minister Abdullah and other members of the federal government began making statements that suggested the federal government would consider appropriating land from the states for the purpose of conservation, beginning with Bukit Cahaya. The Sultan of Selangor, Sharafuddin Idris Shah, wanted the agricultural park to stay in the hands of the government as a 'green lung'. The state of Selangor, where Bukit Cahaya is located, already ceded land to the federal government for the creation of the Kuala Lumpur Federal Territory and Putrajaya, the administrative capital near the airport, and the issue thus remains a touchy one. The prime minister, in response to the sultan's misgivings, floated the idea of the federal government buying cleared but undeveloped land from the states. Still, the authorities in Selangor were cool to this idea, as the authorities in any state are loathe to cede control of land to the government. Some compromises have been tabled; for example, some suggest that the federal government lease land in practical perpetuity, with leases lasting 999 years.

After the initial flurry of attention, the Bukit Cahaya issue died down considerably. In late 2005, 5 of the 23 projects that had been stopped in the wake of the revelations were allowed to resume after meeting stricter geotechnical and planning guidelines imposed by the state of Selangor. In mid 2006, it was announced that the Malaysian Agricultural Park at Bukit Cahaya would be renamed and developed as the Shah Alam National Botanical Park, with the federal government securing a 60-year lease for 1200 hectares. The development plan was scheduled to be completed by the end of 2006.

The imbroligio over Bukit Cahaya and subsequent media attention have brought to light several issues. One is the lack of coordination between the state environmental agency and the local authorities that issue approval for excavation. A senior official for Selangor described 'double submissions' of applications in which developers submit applications for excavation permits at the same time that they submit EIAs to the Department of Environment. The local authority under these circumstances often issues approval under the assumption that the EIA will be approved. This type of 'business as usual' approach suggests that the practice is commonplace and that EIAs are rarely questioned. Furthermore, the Sultan's reluctance to cede the land to the federal government indicates how adamant state authorities are on land issues. The affair also demonstrates the cyclical nature of environmental politics in Malaysia. Once in several years environmental issues seem to make headlines, and instances of abuse and unsustainable use are detailed in the media. Some sceptical observers tie these episodes to the rise and fall of the political fortunes of state-level

politicians, suggesting that there is some connection between the airing of scandal and certain politicians suddenly falling out of favour with the national party organization.

In the wake of Bukit Cahaya, which is convenient in terms of location to Putrajaya,[19] the prime minister announced that EIAs would be required of any development covering 20 hectares or more, down from the current minimum of 50 hectares, though this has not yet been implemented. Developers can no longer cut down trees with a diameter of greater than 6 inches, and land set aside for development is to be converted to public recreation land. Furthermore, the Natural Resources and Environment Ministry is requesting that state governments go through the state assemblies before degazetting land, adjusting the current procedure, which is to go through the state executive committee. Dato Sri Haji Adenan Haji Satem, the Natural Resources and Environment Minister, has also announced the establishment of a 'flying squad' to operate under the Forestry Department to improve enforcement, as well as a toll-free hotline for citizens to report illegal burning. The chief minister of Terengganu state has already voiced dissatisfaction with the proposal to require approval from the state assemblies before degazetting land, suggesting that it would open the door to bringing more matters in front of the state assemblies.

The future

It is hard to say whether the park systems of Malaysia will ever be consolidated into one all-encompassing agency. Bureaucratic reform in Malaysia tends to increase efficiency, but for the purpose of facing international competition (Haque 1998). Hence the market forces that push Malaysia forward in other arenas are not as effective in conservation. There are some potentially useful legal tools, though.

The Constitution and its amendments contain provisions that could be used by the federal government to assert power over the states for the purposes of creating protected areas. Under Article 76, for instance, Parliament can make laws for the states to conform to international treaties (Bari 2003). The Malaysian Constitution also allows the federal government to make laws for the purpose of ensuring uniformity amongst the states. This provision could be applied in the interests of conservation strategies. For example, the federal government could increase the power and devote more resources, support and manpower to the Department of Wildlife and National Parks, thereby transforming it from its current advisory capacity to a more regulatory role. The federal government could use these constitutional provisions to appropriate land from the states for conservation purposes. The central

government could even go so far as to require the several states to develop and implement conservation plans. These could be far-reaching, just as long as the action taken by the federal government vis-à-vis the states is uniform. Any of these strategies would require a tremendous amount of political will, however, and would obviously engender resentment at the state level towards the federal government. A gradual approach would certainly be the most effective, but the federal government always has the option of wielding 'the power of the purse', whereby federal funds are withheld to punish recalcitrant states.

However, it is hard to imagine an umbrella agency responsible for all the parks in Malaysia for the simple fact that Sabah and Sarawak would never agree to such a merger. The money from the parks in those states stays within the state, and so the lucrative parks of Borneo do not and will not subsidize parks in the Peninsula. The situation works well for Sabah and Sarawak because they receive federal funding for park development but have to give nothing in return. Their park systems also help them keep a unique identity. The Peninsular states, however, may find that innovative arrangements, such as long-term leases for national parks, may help them realize economic benefits through increased funding from the federal government, as well as positive returns from ecotourism while maintaining a veneer of sovereignty over the areas.

Increasing international pressure also could contribute to the gazetting of more national parks in Malaysia as it tries to placate foreign governments and NGOs critical of its forestry policies. The nation may also see a reordering of priorities once the most useable land is logged out and the hinter-regions of the country move from extensive agriculture to more intensive cultivation and more secondary and tertiary industries.

Summary

This chapter traces the historical antecedents to Malaysia's national parks' bureaucracy and explains the complications posed by federal–state politics and the individual states' competence over their lands and forests. It analyses the challenges faced by federal agencies and environmentalists in persuading state governments to gazette national parks and protected areas and to maintain protected status for these areas in the face of developmental priorities.

Acknowledgements

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End notes

1. Of the world's 42 remaining ruling monarchies, 9 are in Malaysia (Harding 1993).
2. The Torrens system refers to a system of alienation that was used in Australia in which all land ownership is vested in the Crown. It is then leased to users, reverting back to the Crown when the lease expires.
3. Peninsular Malaysia is made up of 11 states and the Federal Territory of Kuala Lumpur; Sabah and Sarawak are states as well, though they have special privileges under the Constitution and only joined what would become Malaysia in 1963.
4. This excludes Taman Negara, which was gazetted and covered by three separate state enactments during the colonial period.
5. The International Union for the Conservation of Nature (now the World Conservation Union) laid out several different types of protected areas, from Type I areas for strict protection to Type VII areas. These various designations allow for different levels of human–protected area interaction.
6. Which minister is not specified, but it can be assumed that the law refers to the minister or whichever ministry the Department of Wildlife and National Parks falls under, though this omission can be seen as a weakness of the law.
7. The name Endau-Rompin officially refers to the Johor side of the area, as the Pahang side is officially called 'Rompin-Endau', but the name Endau-Rompin has come to signify the whole area and will thus be used in this chapter.
8. Endau-Rompin is now managed by the privatized Johor National Parks Corporation, which refers to the area as a 'National Park'.
9. The overall size of Penang National Park including water is 2563 hectares.
10. The Department of Wildlife and National Parks (DWNP or PERHILITAN in Bahasa Malaysia) is the federal agency responsible for conservation and protected areas policy in Malaysia.
11. Pinang is the Bahasa Malaysia spelling.
12. Penang is home to Sahabat Alam Malaysia, the Penang Consumers Association and the Universiti Sains Malaysia (Malaysia Science University).
13. Sabah's parks are all known simply as parks, not 'National Parks'.
14. Website at www.sarawakforestry.com.
15. The Sarawak Forestry Corporation has units responsible for both conservation (the Protected Areas and Biodiversity Conservation Unit) and the regulation of the timber industry (the Sustainable Forestry and Compliance Unit).
16. Nizam Mahsham, Research Coordinator, Sahabat Alam Malaysia, personal communication.
17. In a landmark case in September 2005, a Superior Court of Appeals in Malaysia ordered the government to compensate a group of Temuans for the seizure of their land in 1996 for the construction of a new highway to the recently constructed Kuala Lumpur International Airport.
18. See Chapter 19.
19. Putrajaya is the administrative capital of Malaysia.

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26

What protects the protected areas? Decentralization in Indonesia, the challenges facing its terrestrial and marine national parks and the rise of regional protected areas

JASON M. PATLIS

Introduction

Since Indonesia's rapid push towards decentralization beginning in 1999, it has been its natural resources that have been most heavily exploited by regional governments. There are numerous causes for this trend, the major one being the provisions of Law No. 25/1999 (superseded by Law No. 33/2004), which mandated that up to 80% of natural-resource revenues be redirected to the regional governments. This was a change from a mere 20% prior to 1999. Another cause was the overly broad and vague language of the original law on regional autonomy, Law No. 22/1999 (superseded by Law No. 32/2004), which led regional governments to manage resources in a manner that, in reality, was far beyond the parameters allowed by the larger legal framework (i.e. *ultra vires* or beyond their powers). A third cause was the lax enforcement regime and rampant corruption in the natural-resource sectors, which allowed regional governments to engage in rent-seeking activities independent of the legal framework.

This exploitation has put a strain on Indonesia's national parks and other protected areas in a number of ways. Most directly, many of these exploitative activities have occurred illegally within the protected areas themselves. More indirectly, where exploitative activities have increased in the nation's forests

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and coastal waters, the existing protected areas have had to bear the additional burden of maintaining the ecological functions of the larger ecosystem, whether in terms of preserving species diversity and abundance, or protecting sensitive habitats.

This strain on the nation's protected areas has been both alleviated and exacerbated by recent developments in the legal framework relating to natural-resource management. Patlis (2005a) details these developments – from the overarching ambiguity of the original Law No. 22/1999 to the efforts to address this ambiguity at both the regional and national levels, and finally to the enactment of the new laws in 2004. Law No. 32/2004 on Regional Government contains provisions relating to national parks and other protected areas. This law reiterates the regional sea delimitations for districts and provinces, opening the door for regional Marine Protected Areas. Law 32/2004 also authorizes the central government to establish areas of national significance within regional boundaries, thus keeping the door open for additional national protected areas.

New laws have been enacted for the forestry sector (Law No. 41/1999) and the fisheries sector (Law No. 31/2004), both of which contain provisions relating to national parks and other protected areas. Law 41/1999 on Forestry, for example, provides for a rigid classification of protected areas emanating from the central government. Law 31/2004 on Fisheries, in contrast, provides for a much more flexible network of Marine Protected Areas across different levels of government. In addition, Law 31/2004 resolves a longstanding jurisdictional conflict between the Ministry of Forestry (MOF) and the Ministry of Marine Affairs and Fisheries (MMAF) regarding Marine Protected Areas and protected species by explicitly providing that these responsibilities lie with the MMAF. It leaves open the question, however, of how to ensure smooth coordination between the two ministries.

With many questions still lingering regarding the recently enacted laws, the next step for Indonesia is to promulgate implementing regulations in order to clarify the roles, responsibilities and opportunities for various stakeholders and governments in maintaining a viable, robust network of national and regional parks and other protected areas across the archipelago.

Section 2 of this chapter considers the importance of Indonesia's national parks and other protected areas, and makes general observations regarding the legal framework governing these parks and protected areas. Section 3 looks at some of the systemic problems in this legal framework that undermine protection of protected areas. Section 4 analyses how these problems have been exacerbated further by decentralization. Section 5 surveys the new developments in the legal framework, specifically the new laws for regional autonomy

and conservation of natural resources that both help and hurt management of national parks and protected areas. Section 6 finally looks at future trends and possibilities in the development and maintenance of national parks and protected areas in light of these new developments. Where possible, it draws comparisons between Terrestrial and Marine Protected Areas, and the different avenues of management taken for both.

Importance and status of Indonesia's protected areas

There is ample documentation on the profound richness of biological diversity in Indonesia, with respect to the number of species of fauna and flora, number of ecosystem types and degree of endemism. The numbers alone are impressive: 6000 species and 47 ecosystem types, with rates of endemism ranging from 51% for mammals and 59% for flowering plants (Ministry of Forestry *et al.* 2003). Specifically in the terrestrial context, Indonesia boasts 100–125 million hectares of forest (Casson *et al.* 2005). In the marine context, Indonesia is home to approximately 15% of the world's coral reef ecosystems (Rhee *et al.* 2004). The Sunda Shelf contains about 20% of the world's mangrove forests, of which more than 70% is located in Papua alone (Rhee *et al.* 2004).

The threats to, and destruction of, Indonesia's rich biological diversity are also well documented. Casson *et al.* (2005) summarizes the most recent statistics: approximately 25–40% (40–60 million hectares) of Indonesia's forests have been lost in the last 50 years; estimates of total illegal logging range from 0% by the *Badan Revitalisasi Industri Kayu* (BRIK) (Forest Industry Revitalization Body), to estimates of 60%, 68%, 76% and 82% by various researchers. Relative estimates of illegal logging suggest that 7 million cubic metres of illegal timber are derived from Protection Areas, 4 million cubic metres from Conservation Areas, 12 million cubic metres from Conversion Areas, and 27 million cubic metres from Production Areas.

Approximately 50% of Indonesia's mangroves have been destroyed. Based on 1998 figures, only 832 000 hectares of Indonesia's 3.42 million hectares of mangroves are actually found in protected areas (Rhee *et al.* 2004).[1] As for coral reef ecosystems, only 8% are considered in very good condition. With respect to marine resources, the greatest threats are overfishing, and various forms of illegal fishing, particularly destructive fishing practices (Dutton 2005). The top three threats to Indonesian Marine Protected Areas are hunting of endangered species, destructive fishing and overfishing (UP-MSI *et al.* 2002).

Among the many tools to conserve and protect these vanishing resources are the establishment and management of protected areas. For the purposes of this chapter, 'protected areas' is used in the generic sense for all forms of

specified areas that are defined by law and having special regulations for management (Table 26.1).

Overall, protected areas in Indonesia amount to almost 28 million hectares (Ministry of Forestry *et al.* 2003), as depicted in Table 26.1. This table reveals the overwhelming prejudice toward land-based protected areas. Indonesia's total sovereign jurisdiction includes 1.9 million km^2 of land and 5.8 million km^2 of water. Its sovereign jurisdiction thus consists of two-thirds of water. Despite this, based on the figures in Table 26.1, barely 20% of Indonesia's protected areas are marine based.

Table 26.1 identifies the six major classifications of protected areas: (1) Strict nature reserves (*Cagar alam*); (2) Wildlife sanctuaries (*Suaka margasatwa*); (3) National parks (*Taman nasional*); (4) Nature recreation parks (*Taman wisata alam*); (5) Grand forest parks (*Taman hutan raya*); and (6) Game Reserves (*Hutan buru*). These six classifications draw their authority from the two major statutes relating to conservation of natural living resources – Law No. 5/1990 on the Conservation of Living Resources and their Ecosystems and Law No. 41/1999 on Forestry. These six major categories of protected areas are not too dissimilar from the five categories of protected areas recommended by IUCN.[2] These include: (1a) strict nature reserves; (1b) wilderness areas; (2) national parks; (3) natural monuments; (4) habitat/species management areas; and (5) protected landscapes/seascapes.

'Wildlife sanctuaries' and 'strict nature reserves' fall under the general grouping of 'nature preservation areas' (*kawasan suaka alam*), while 'national parks', 'nature recreation parks' and 'grand forest parks' fall under the grouping of 'nature conservation areas' (*kawasan pelestarian alam*). This is an ambiguous distinction drawn by the Ministry of Forestry, pursuant to which 'nature preservation' is defined under Law No. 5/1990 to mean protection of biological diversity and ecosystems, and 'nature conservation' to mean protection of biodiversity and provision for sustainable utilization of ecosystems. At the same time, implementing regulations for these protected areas do not clearly identify which activities are allowed and which are not (Sembiring 1999). As a result, while there is a difference in terminology and definition, the practical distinction between these classifications remains unclear.

Figure 26.1 locates these six classifications within the hierarchy of the forest land management system in Indonesia. Thus, it is the Ministry of Forestry that has primary responsibility for the establishment, management and oversight of almost all protected areas in Indonesia. This authority emanates from the original Basic Forestry Law No. 5/1967, which provides in the general elucidation that one of the functions of forest lands is to improve the natural beauty of

Table 26.1 *Comparison of Marine and Terrestrial Protected Areas in Indonesia*

	Total number			Total hectares		
Type	Total	Land	Water	Total	Land	Water
Strict nature reserves						
Cagar alam	221	212	9	4635426	4418871	216155
Wildlife sanctuaries						
Suaka margasatwa	68	62	6	4923002	4851692	71310
National parks						
Taman nasional	50	43	7	16380492	12336950	4043541
Nature recreation parks						
Taman wisata alam	120[a]	100	17	1129480	363999	765482
Grand forest parks						
Taman hutan raya	21	21	–	329016	329016	–
Game Reserves						
Hutan buru	14	14	–	225993	225993	–
TOTAL	491	452	39	27623408	22526519	5096889

Source: Ministry of Forestry *et al.* (2003).

[a] Number in original table from Ministry of Forestry.

the land through the establishment of strict nature reserves (*cagar alam*), wildlife sanctuaries (*suaka margasatwa*), tourist parks (*taman wisata*) and hunting parks (*taman buru*). Article 3 further defines these specific areas, and Article 1 provides that the authority for implementing the law rests with the Ministry of Forestry.

In recent years, there has been significant criticism of the jurisdictional reach of the Ministry of Forestry in claiming approximately 120 million hectares, or 70% of Indonesia's territorial area, as forest area or *kawasan hutan* (Fay & Sirait 2004). Actual boundaries are depicted in the forest boundary setting by consensus policy (TGHK), developed through the 1970s and 1980s. The criticism is that there is no legal basis for this 'land grab' by the Ministry of Forestry, in the sense that actual ownership of approximately 90% of forest area has not been officially settled pursuant to the Basic Agrarian Law No. 5/1960. Hence, the Ministry does not have the legal authority to issue use-rights (*hak pemanfaatan*) through the issuing of permits. This criticism has taken on greater relevance as more and more original forested land gives way to development and conversion, and yet remains listed officially as 'forest area' (*kawasan hutan*).

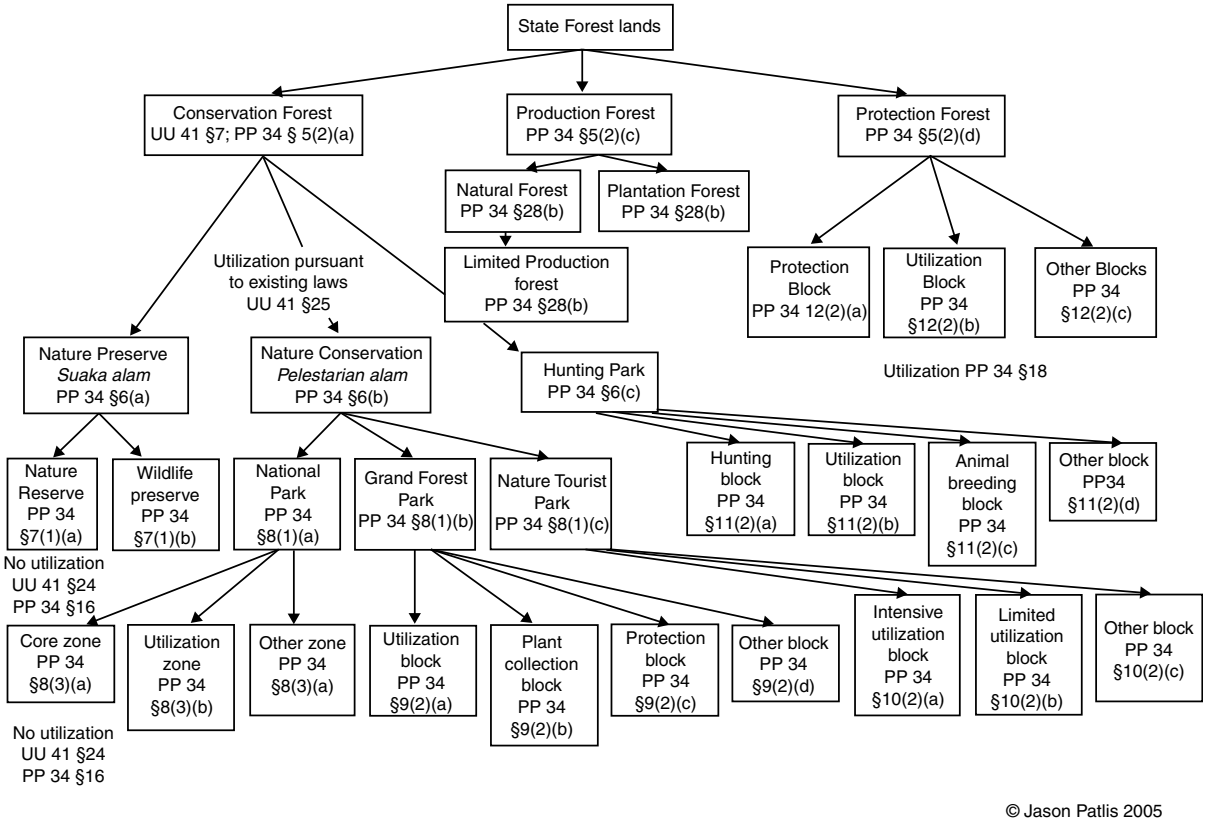

Figure 26.1. Hierarchy of protected areas managed by the Indonesian Ministry of Forestry.

By the same token, one can argue that the basis for the Ministry of Forestry's jurisdiction over protected areas is equally weak. The actual language in Article 3 of Act No. 5/1967 defines protected areas as 'protected *forest*' (*hutan lindung*), and not protected *area*. Likewise, the article defines forest sanctuary reserves (*hutan suaka alam*) and tourist forests (*hutan wisata*). Strict nature reserves (*cagar alam*) and wildlife sanctuaries (*suaka margasatwa*) are defined as specific areas within *hutan suaka alam*. In each case, it uses the Indonesian term *hutan*, meaning 'forest', rather than *kawasan*, meaning 'area'. The switch comes in Law No. 5/1990, in which Article 1 defines the specific areas as '*kawasan*', rather than '*hutan*'. This linguistic change notwithstanding, management of these areas – whether within forest lands or not – remains with the Ministry of Forestry.[3] While Law No. 5/1990 does not mention any ministry as having authority for implementing the statute, Regulation 68/1998 on Sanctuary Areas and Conservation Areas provides that the Ministry of Forestry has jurisdiction over these areas. Act No. 41/1999 on Forestry perpetuates the language reinforcing the ministry's jurisdiction.

However, beyond the surface of the six major categories of protected areas managed by the Ministry of Forestry is a complex web of different classifications, together with their associated names, functions, restrictions and jurisdictions. Table 26.2 lists the various classifications found in the national legal framework. This compilation indicates the complexity of, and confusion within, Indonesia's network of protected areas (Table 26.2).

Systemic challenges in the management of protected areas

As discussed above, the framework governing protected areas is a complex one. This section explores how that framework contributes to widely cited problems in management and enforcement. Stated another way, how do bad laws contribute to bad enforcement and poor compliance?

The framework can be summed up as, in a word, sectoral. Each agency has essentially championed its own statute, whether in fisheries, forestry, mining, tourism, agriculture, industry, etc. This has led to a framework that is replete with gaps, inconsistencies, redundancies and, generally, what can be termed 'disconnects' (Patlis 2005a). These disconnects can be found in each of the five basic components of any law: (1) the preambular provisions – goals, scope, etc.; (2) definitions; (3) administrative and institutional provisions; (4) regulatory and management provisions; and (5) enforcement, monitoring, sanctions and penalties.[4]

We have already seen these disconnects in the statutory definitions and institutions relating to protected areas. With respect to management measures,

Table 26.2 *Types of protected areas in Indonesia*

	Type of protected area	Authorizing legislation	Implementing regulation	Definition (translation from Indonesian)
1	Protected area *Kawasan lindung*	UU 24/1992	PP 47/1997	A protection area is the area designated with the primar preservation of the environment encompassing natural r made resources.
2	Protected area *Kawasan terlindungi*	UU 5/1994		A geographically defined area, that is designated or regul to achieve specific conservation objectives.
3	Protected forest *Hutan lindung*	UU 41/1999	PP 34/2002	A forest area having the main function of protecting life-s for hydrology, preventing floods, controlling erosion, pre intrusion and maintaining soil fertility.
4	Cultivation area *Kawasan budidaya*	UU 24/1992	PP 47/1997	An area designated with the primary function of cultiva condition and potential of the natural resources, human r made resources.
5	Tourist area *Kawasan pariwasata*	UU 9/1990	PP 67/1996	A defined area that is established or prepared to satisfy
6	Nature recreation park *Taman wisata alam*	UU 5/1990	PP 19/1994; PP 68/1998; PP 34/2002	A nature conservation area mainly intended for recreati purposes.
7	Sanctuary reserve *Kawasan suaka alam*	UU 5/1990; UU 41/1999	PP 68/1998; PP 34/2002	A specific terrestrial or aquatic area having sanctuary as preserving plant and animal biodiversity as well as an ec acts as a life support system.
8	Strict nature reserve *Cagar alam*	UU 5/1990	PP 68/1998; PP 34/2002	A sanctuary reserve area having a characteristic set of pl ecosystems, which must be protected and allowed to de
9	Nature conservation area *Kawasan pelestarian alam*	UU 5/1990	PP 68/1998; PP 34/2002	A specific terrestrial or aquatic area whose main functio diversity of as well as to provide a sustainable utilization and their ecosystems.

0	Wildlife sanctuary *Suaka margasatwa*	UU 5/1990	PP 68/1998; PP 34/2002	A sanctuary reserve area having high value of species dive unique animal species, in which habitat management may order to assure their continuity and existence.
1	National park *Taman nasional*	UU 5/1990; UU 41/1999	PP 18/1994; PP 68/1998; PP 34/2002	A nature conservation area which processes native ecosyste managed through a zoning system which facilitates resea ucation, breeding enhancement, culture, recreation and t
2	Grand forest park *Taman hutan raya*	UU 5/1990 UU 41/1999	PP 18/1994; PP 68/1998; PP 34/2002	A nature conservation area intended to provide a variety o or introduced plants and animals for research, science, edu enhancement, culture, recreation and tourism purposes.
3	Conservation forest *Hutan konservasi*	UU 41/1999	PP 34/2002	A forest area with specific characteristics, having the mai preserving plant and animal diversity and its ecosystem.
4	Nature conservation forest *Kawasan hutan pelestarian alam*	UU 41/1999	PP 34/2002	A forest area with specific characteristics, having the mai protecting life-supporting systems, preserving species dive and animals, and sustainable use of biological resources a
5	Hunting park *Taman buru*	UU 41/1999	PP 13/1994; PP 34/2002	A forest area determined as a park for hunting.
6	Biosphere reserve *Cagar biosfer*	UU 5/1990	PP 47/1997	An area of native, unique and/or degraded ecosystems, wh components need to be protected and sustained for researc
7	Marine area *Lokasi perairan tertentu*	UU 9/1985	PP 68/1998	For the importance of scientific knowledge, culture or natu the government can establish specific fish species and/or areas such as fisheries areas that are protected.
8	Protected marine area *Kawasan perairan dilindungi*	UU 31/2004 (article 7(5))		Area of water for the importance of scientific knowledge, or conservation of natural fish resources and their enviro
9	Fisheries area *Suaka perikanan*	UU 31/2004		Not defined.

perhaps no better example exists than the nearly 40-year-old battle between protected areas and mining. The original mining statute – Law No. 11/1967 – defines all lands as suitable for mining. Despite the subsequent enactment of Law No. 4/1982 relating to Environmental Management, and Law No. 5/1990 relating to Conservation of Natural Living Resources and their Ecosystems (which would have generally superseded the provisions of the mining law), it was not until Law No. 41/1999 on Forestry was passed that mining in protected forests became explicitly prohibited and the issue seemingly resolved. However, with economic pressures, the threat of litigation, and an anaemic environment ministry, the government enacted a Regulation in Lieu of Statute No. 1/2004 to allow 12 mining companies to resume operations, which ostensibly had operations predating the 1999 forestry law. For this purpose, the government invoked rarely used emergency rule-making procedures that had earlier been used to enact antiterrorism measures following the Bali bombing. This mining regulation has since been codified as a fully fledged law, Act No. 19/2004.

The same disconnects can be found in the enforcement provisions relating to fines and sanctions. These provisions range widely, in terms of standard of liability – strict, intentional, negligent – and in terms of fines and prison terms. For example, in Act No. 23/1997, conducting an activity that results in the destruction or damage of the environment is punishable by three years' imprisonment or 100 million rupiah fine if negligent, and ten years' imprisonment or 500 million rupiah fine if intentional. Under Act No. 41/1999, an activity that results in the destruction of forests is punishable by ten years' imprisonment or 5000 million rupiah fine if intentional (without any specific sentence for negligent acts). At the same time, Act No. 5/1990 provides that activities that involve taking, cutting, damaging or destroying protected species are subject to only one year's imprisonment or 50 million rupiah fine if negligent, and five years' imprisonment or 100 million rupiah fine if intentional. Under the new fisheries law (Act No. 31/2004), destruction of fisheries habitats or resources is punishable by ten years' imprisonment and 2000 million rupiah fine if intentional. More examples abound, and the situation allows for cherry-picking by both defence attorneys and prosecutors in terms of what crimes to charge for.

This sectoral approach is perpetuated by design. First, laws are, by design, drafted along sectoral lines. Despite the rhetoric to integrate and coordinate, laws are still drafted and championed by individual line ministries, through a very formulaic and rigid process that requires a series of letters and permits from different layers of government (Sherlock, unpublished). A new statute – Law No. 10/2004 on Establishment of Laws – explicitly requires (in Article 18) that one agency manage the process for a statute, both within the executive

branch and Parliament. This reinforces the sectoral nature of law-making, in the sense that laws are written to strengthen the bureaucratic position of individual agencies rather than to strengthen the national legal framework (ADB 2002). Laws thus serve the institution, not the nation.

Second, the laws are, again by design, written in a manner so as to avoid basic principles of legislative and administrative law and to avoid the general canons of statutory construction. This is done in three ways. First, vagueness and overbreadth plague all laws at all levels. Much of this is a deliberate effort to obfuscate the law so that it can be freely interpreted as necessary 'for the moment'. Much of it relates to misplaced intentions in maintaining the legal hierarchy; and much of it is just plain poor drafting. Whatever the reason, this vagueness creates a huge grey area in the law, with crippling results for implementation (Patlis 2002). Second, is the ubiquitous case of the 'implied repeal'. This is a legislative device by which one law supersedes another. Consider these two examples from Law No. 41/1999 on Forestry.

> Article 82–All implementing regulations from the laws relating to the subject of forestry that exist, as long as they do not conflict with this statute, remain in force until the promulgation of implementing regulations based on this statute.
> Article 83–With the entry into force of this statute, the following laws are no longer in effect: … 2. Law No. 5 of 1967 on Forestry.

An explicit repeal would state that the law supersedes a previously enacted law. An implicit repeal states that all existing laws remain in full force and effect unless contradicted by the new law. Hence, there is no clarity whatsoever as to which law applies in what circumstances. What is considered a contradiction, and who decides? In most jurisdictions, implied repeals are construed narrowly and used rarely (Petroski 2004). However, Indonesian law uses this device as a matter of general policy.

The third feature is the prevalent practice of resolving conflicts between two laws by promulgating a further third law. The legal concepts of *stare decisis* and *res judicata* – essentially, the use of past precedent to guide decisions – is very weak. In the recent mining and forestry conflict, the dispute was ultimately resolved not through litigation, but by the enactment of three separate laws – Regulation in Lieu of State No. 1/2004, Presidential Decree No. 41/2004, and Law No. 19/2004.

These systemic problems negatively affect not only the management of protected areas and forestry resources; they affect every aspect of governance in Indonesia. Their effect on protected areas is especially palpable. The very question of what activities are allowed or prohibited in protected areas is shaped – or more

accurately, confused – by these systemic issues. The question of open-pit mining in protected forests is only one discrete and famous example.

There are numerous other examples. The very definition of illegal logging is affected by the systemic lack of clarity in the law. No less than three separate initiatives have been recently undertaken to attempt to define 'illegal logging', in the absence of any meaningful definition in the law itself. One effort is being led by Smartwood, Lembaga Ecolabel Institute (LEI) and other organizations engaged in timber certification, pursuant to principles developed by the Forest Stewardship Council (FSC). Several non-governmental organizations (NGOs) have criticized this effort, and timber certification generally, by insisting that no timber concession can possibly comply with FCS principles, given the state of confusion and uncertainty in Indonesian law, particularly as regards land tenure and rights of *adat* communities (WALHI & AMAN 2002). Meanwhile, the British Department for International Development (DFID) undertook a one-year project in 2003 to seek stakeholder agreement on the meaning of 'illegal logging'. Finally, the Nature Conservancy (TNC) is also undertaking a similar study, and has drawn up a series of criteria as to what constitutes 'illegal logging'. Up till now, no consensus among stakeholders has yet been reached (Casson *et al.* 2005). The only reason a consensus-building exercise is necessary is because of the lack of clarity in the 'black-letter' law.

The issue of *adat* communities, particularly the status of the lands on which they live and the status of their rights and ownership over the resources that they use and manage, is another matter affected by the systemic lack of clarity in law. The history of the legal frameworks relating to *adat* communities represents more than 40 years of laws and policies with complex and often contradictory implications, entailing ambiguous rights on paper and marginalization in practice (Campbell 2002). These laws affect the very definition of 'legality' in the forestry sector, and lead to competing claims of authority over forest areas and resources. The basic statute relating to agrarian rights is Law No. 5/1960. This law recognizes customary rights (*hak ulayat*), and registration of *adat* lands. However, no meaningful implementing regulations have ever been enacted. Further, according to Law No. 5/1960, recognition of traditional land rights and *hak ulayat* is conditioned upon their consistency with the 'national interest'. This qualification has frequently been used to limit the application of the law (Lynch & Harwell 2002).

Even recent laws and policies attempting to strengthen the position of *adat* communities have suffered from the lack of clarity and consistency in the legal framework. In 1998, for instance, the Ministry of Forestry, through Decree No. 47/1998, established a new classification of forest use – *Kawasan dengan Tujuan Istimewa* (Area with Special Purpose) – for *adat* communities. Further, the

ministry's Decree No. 677/1998 gave local communities greater opportunities for participation in decision-making and greater access to forest resources within community forests (*hutan kemasyarakat*). However, this was conditioned upon adherence to fairly strict requirements, such as the formation of a cooperative and formal recognition by the district government.

Two laws, now superseded – Regulation No. 6/1998 and Ministerial Decree No. 317/1999 – provided a process for recognition of *adat* lands by district governments. These instruments allowed *adat* communities to obtain locally issued permits (known as HPHH) on lands within Production Forests and Conversion Forests that were identified for reclassification to other purposes. The district governments subsequently used this authority to overwrite logging concessions previously awarded by the central government, on the basis of awarding lands to *adat* communities. With poor mapping and gazetting, these permits sometimes crossed into protected areas as well. The relevant laws thus up-ended the pre-existing legal framework by allowing for district-based permits in a manner that was unclear, inconsistent and unenforceable. Subsequently, the Ministry of Forestry decided to revoke these laws and attempted to revert to a centralized system, clearly going against the laws on decentralization. Earlier, in 2000, the Ministry of Forestry had issued Decree No. 05.1/Kpts-II/2000, allowing district and provincial governments to issue forest concessions up to 50000 hectares. This decree was revoked two years later by Decree No. 541/Kpts-II/2002, because the ministry felt that district governments were abusing their authority.

On its part, Law No. 41/1999 revised and, to some extent, consolidated the regulations relating to *adat* rights in forest management. First, it explicitly recognizes customary forests (*hutan adat*) – though still viewed as state forests, these are given a special classification. Article 67(1) provides that formally recognized *adat* communities have the right to collect forest products for subsistence purposes, to manage the forest under customary traditions (provided these do not conflict with existing laws), and to improve their welfare generally. Article 67(2) provides that formal recognition is to be stipulated by district-level regulations. The primary implementing regulation for Law 41/1999, Regulation No. 34/2002, further clarifies the fact that district-based permits for timber harvesting are prohibited.

Another aspect of forest utilization that has been negatively affected by the systemic lack of clarity in the legal framework is forest mapping and planning. The spatial planning laws also contribute to the 'grey area' by creating conflicting classifications and designations for land use, as well as conflicting procedures for determining those designations. In terms of substance, many spatial plans are inconsistent with the TGHK (the consensual forest-use plans) prepared by each province. This raises significant questions as to which land-use plan has

controlling authority. Indeed, Law No. 41/1999 recognized the fact that there may be inconsistencies and stated that provincial spatial plans must be taken into account in forest gazetting. In terms of process, Law No. 24/1992 on Spatial Planning contains specific provisions (such as Article 21) for public participation in spatial planning for all sectors, including forestry. However, the TGHK in each province has not been revised to accommodate such new requirements.

In the marine context, lack of legal clarity has also plagued conservation efforts. There is widespread perception, for example, that two of the most destructive forms of fishing – bomb and cyanide-fishing – are explicitly prohibited by law, notably, Law No. 9/1985 on Fisheries. However, the fact remains that bomb and cyanide-fishing are not explicitly prohibited. Rather, Article 6(a) of Law 9/1985 offers a generic, vague and overbroad prohibition against anyone using materials or equipment that endanger the sustainability of fish resources or their environment. If this provision were interpreted literally, most fishing activities across the archipelago would be prohibited. There is no Implementing Regulation or Ministerial Decree that specifically prohibits bomb or cyanide-fishing. The new Law No. 31/2004 on Fisheries, which supersedes Law No. 9/1985, revises the prohibition slightly, but remains just as general and vague. Certainly, these provisions can be used to prosecute instances of bomb and cyanide-fishing, but proof is first required that these activities fall within the prohibition, and further proof is then needed for the facts at hand. Without some a priori declaration of illegality, such cases are difficult to prosecute.

This section has sought to demonstrate that problems often cited as failure in the law – lack of enforcement, corruption, lack of funding for implementation, etc. – stem from problems that arise in the preparation, enactment and interpretation of those laws. In other words, even without corruption and even with adequate funding and staffing of regulatory and enforcement agencies, the clear and consistent application of the law is still impossible. With respect to protected areas specifically, boundaries, and mapping and planning procedures are unclear; similarly, prohibited activities within protected areas and the regulatory and enforcement authority are unclear. These problems have all been exacerbated by the decentralization process.

Impacts of decentralization on protected areas

Patlis (2005b) offers a discussion of decentralization and its impacts on natural-resource management in Indonesia. In sum, Indonesia's unitary system is being challenged by its recent 'big bang' decentralization, under which two primary statutes – Law No. 22 on Regional Autonomy and Law No. 25 on

Financial Balance – were enacted in late 1999. These two laws took effect barely one year later on 1 January 2001, with little opportunity for a smooth transition (Hofman & Kaiser 2002). Two trends have been observed since then: (1) at the national level, the House of Representatives (DPR) is discovering its own voice, revising legislative bills submitted by the president and developing bills on its initiative (at least on first impression) without waiting for the president to submit them; (2) at the regional level, local governments are discovering their own voices and are developing rules (both administratively and legislatively) that do not necessarily conform with the policies, traditions or even dictates of the central government. In late 2004, the DPR enacted two long-awaited statutes that revised the decentralization framework for Indonesia. These two statutes – Laws Nos. 32/2004 and 33/2004 – supersede the original Laws Nos. 22/1999 and 25/1999. Many of the basic provisions in the 1999 and 2004 laws are similar, but there are some significant differences.

Law No. 32/2004 sets out to correct the mistakes and to clarify the ambiguities of Law No. 22/1999. One ambiguity was the inherent conflict between Law No. 22/1999 and the pre-existing legal framework (Bell 2001). Districts and municipalities had been given authority to manage their affairs pursuant to their needs, goals and capacities (Article 4), while the central government had authority in certain areas reserved for it, including foreign affairs, security, judicial matters, national monetary and fiscal policy, and religion (Article 7(1)). This language had created what some scholars term as 'regional euphoria' – a sense that regional governments have virtually unfettered authority to manage their own affairs independent of pre-existing sectoral mandates that were centrist in nature (ADB 2002). In implementing their own vision of regional autonomy during the period between 2000 and 2004, districts exhibited ingenuity, guile and speed in enacting new regional laws. Many took advantage of rent-seeking (or rent-harvesting) opportunities in managing natural resources, ignoring the 'fine-print' of the laws that restricted this authority.

The 'fine-print' included restrictions on the district authorities, as well as specially defined authority for the provinces and central government. For example, the central government had authority to make policies, standards and guidelines for natural-resource management and conservation (Article 7(2)), while regional governments were required to manage natural resources in accordance with existing laws (Article 10(1)). The central government had authority to review and reject regional laws that violated existing laws (Article 114). Taken together, these provisions meant that regional governments had the authority to manage resources, but with the responsibility to do so consistent with the existing framework and with the obligation to enforce that framework.

The newly enacted Law No. 32/2004 clarifies many of the ambiguities and inconsistencies caused by Law No. 22/1999. Much of the basic framework has been carried forward to the new law, including the broad authority for regional governments to manage their own affairs (see Article 13 for provinces and Article 14 for districts and municipalities). The new law does a better job of incorporating the rhetoric of good governance. Hence, traditional rights are to be respected and followed, consistent with the nation's principles (Article 2). Sound management, accountability and efficiency are to be the bases of government actions (Article 11). Natural-resource management is to be conducted in a fair and harmonious manner (Article 2(6)). Communities have a right to be involved in the development of regional regulations (Article 139(1)). There is also clear language that regional regulations must comply with the existing legal framework (Articles 139(2), 145).

The new law also places greater emphasis on the *relationship* between central and regional governments, rather than the *authority* (or *autonomy*) of regional governments. For example, Article 2(4) provides that, in conducting the affairs of government, regional governments have a connection (*hubungan*) with the central government and other regional governments. The elucidation to Law No. 32/2004 describes this relationship as a partnership (*kemitraan*). This is a crucial, although as yet undefined, shift in the paradigm and epistemology of decentralized governance that stems from the earlier amendment to Article 18B of the Constitution in 2000.

The distribution of revenues derived from natural-resource utilization has also shifted pursuant to regional autonomy. Under Law No. 25/1999, the central government received 20% of natural resource revenues, specifically from forestry, fishing and mining. On their part, regional governments received 80%, a reversal of the 80/20 split favouring the central government prior to 1999. As for the division between regional governments, 32% of forestry and mining revenues were to be distributed to the district/municipality of origin. Here, fisheries revenues were handled differently, with distribution in equal sums among all districts throughout Indonesia. This difference highlights the fact that fisheries were treated as commonly owned national resources to be shared by all (Patlis *et al.* 2001).

Decentralization, as interpreted under Law No. 22/1999, gave rise to the establishment of an independent legal framework for forestry management at the provincial and district levels. Within this framework, regional laws largely ignored the central government's legal framework. For instance, regional regulations may create new permit systems and forestry institutions, with prescriptions for timber harvesting, *adat* recognition and endangered species protection that had little regard to existing central government laws on these

issues (Potter & Badcock 2001). Most of these laws were enacted under the presumed authority given to the districts under Law No. 22/1999, despite the qualifications and caveats contained therein.

In Malinau, Bulungan and Berau Districts in East Kalimantan, and elsewhere in Kalimantan, district heads issued permits for timber harvesting without due consideration of tree species or surveys of lands to be harvested, and without consideration of environmental or social impacts (Barr 2001). One of the most prevalent examples of illegal conduct in East and Central Kalimantan is the collection of taxes or retribution on the transport of timber entering and exiting a particular district's jurisdiction (Casson 2001; McCarthy 2001). This practice is sometimes codified and sometimes not. The taxes are imposed on timber that is clearly being transported illegally without the requisite paperwork and markings. Districts openly subscribe to the legal fiction that the timber is of uncertain origin – the timber is thus 'found', rather than 'seized' for being of illegal origin. Such taxes are not legal as they permit the transport of illegal timber, which is not authorized by the central government's laws.

Numerous studies sponsored by NGOs such as TNC and the World Wide Fund for Nature (WWF), donor agencies such as the US Agency for International Development (2004) and lenders such as the World Bank (2001) and the Asian Development Bank (ADB) (2002), have all cited sharp increases in illegal logging since 2000. There is not one national park that has been spared the carnage.

As discussed above, the central government has responded slowly but surely to clarify the regional governments' limitations in managing forest resources. The central authorities have revoked a number of regulations and ministerial decrees issued prior to the enactment of Law No. 41/1999, and have issued a new series of regulations including Regulations No. 34/2002, 35/2002 on the Reforestation Fund and 44/2004 on Forest Planning. Regulation 34/2002, in particular, expressly prohibits regional governments from issuing timber harvest permits. This authority resides squarely and exclusively with the Ministry of Forestry. Regional governments maintain authority to issue permits for other forms of use-rights within forest lands.

New laws and initiatives relating to protected areas

The previous section discussed the deleterious impacts of decentralization on protected-area management. Several recently enacted laws seek to rectify the problems spawned by regional autonomy and to address some of the systemic problems discussed earlier. As regards regional autonomy, Law No. 32/2004 contains a number of provisions relevant to protected areas. The new implementing regulations enacted under Law No. 41/1999 are

relevant for terrestrial protected areas and forest lands, while the new Law No. 31/2004 on Fisheries is relevant for Marine Protected Areas and marine conservation.

There are two provisions in Law No. 32/2004 specifically addressing special geographic areas for management and conservation. Article 9 provides for Special Areas, authorizing the central government to establish special areas within provincial and district areas for matters of national importance. Article 9 explicitly states that matters of national importance include free trade and ports. It also provides that additional matters of national priority are to be regulated through implementing regulations. In the elucidation to Article 9, examples of such additional matters are provided, with nature reserves (*cagar alam*) and environmental conservation (*pelestarian lingkungan hidup*) being specifically identified. In some ways, this is positive: it indicates that the central government maintains authority to establish geographic areas for environmental conservation. However, what is unsettling is that only *cagar alam* is specifically identified, and not national parks or any of the other types of protected areas. While it can be presumed that the central government maintains authority to establish national parks and other protected areas, there is certainly a degree of uncertainty introduced into the equation. That issue aside, Article 9 also provides that if the central government wishes to declare a Special Area, it must involve regional governments in the planning, establishment and management of this area. Regional governments also may propose such areas for establishment.

As regards maritime issues, Law No. 32/2004 (Article 18) retains the regional sea delimitations earlier established by Law No. 22/1999 (in Articles 3 and 10). These set out limits of 12 nautical miles seaward of the shoreline for provincial waters, and 4 nautical miles for district and municipal waters. That this provision has been retained, after four years of rumours and draft proposals to delete it, is a victory for localized integrated coastal management. In fact, Law No. 32/2004 is a vast improvement over Law No. 22/1999 with respect to marine resource management. Under the former, regional governments are given a broad and clear management authority within their marine areas (*wilayah laut*) (Article 18(1)). In contrast, Law No. 22/1999 drew an ambiguous distinction between the provinces' jurisdictional authority over marine areas (*Wilayah Daerah Provinsi*) (Article 3) and the districts' management authority (*kewewengan pengelolaan wilayah laut*) (Article 10). The new authority under Law No. 32/2004 includes exploration, exploitation, conservation and management of marine resources, spatial planning and enforcement of laws (Article 18(3)). Regional governments will get to share the benefits of seabed management in their respective marine areas (Article 18(2)). Guidelines are provided for cadastery, or

marine boundary determination (Articles 18(4) and (5)). In contrast, Law No. 22/1999 was silent on these issues – no provision was made for the use of the seabed, the assumption being that this remained under central government control. Furthermore, there was no provision for designation of marine areas, cadastery, spatial planning and other aspects vital to determining the nature and scope of regional marine authority.

Up until recently, Marine Protected Areas had been managed under the Ministry of Forestry. Since the original Fisheries Law No. 9/1985, there has existed ambiguous authority for fisheries management areas (*suaka perikanan*), but such authority had hitherto not been used to declare specific protected areas. The new Law No. 31/2004 on Fisheries provides for broad new authorities for the Ministry of Marine Affairs and Fisheries. Specifically, Article 7(5) authorizes the Minister to identify marine protected species and to establish Marine Protected Areas, including marine national parks. Article 13 provides that in the course of conserving fish resources, there shall be conservation of ecosystems, fish species and genetics. This is written in the passive voice ('*di dalam rangka konservasi sumber daya ikan, dilakukan upaya konservasi ecosystem, jenis ikan dan genetik*'). It does not specify any particular ministry, and the article merely provides that a government regulation will provide further elaboration.

Despite the language of Law No. 31/2004, the Ministry of Forestry is still insisting that it maintains jurisdiction over national marine parks and refusing to recognize that the new jurisdiction of the Ministry of Marine Affairs and Fisheries is exclusive. Indeed, in early 2005, the Ministry of Forestry declared a new national park in the Togian Islands in Sulawesi. Quite apart from legal authority, it is clear that the Ministry of Marine Affairs and Fisheries does not have the staffing, funding or training to assume management of the existing marine national parks.

It is at this juncture that the roads for Marine and Terrestrial Protected Areas diverge: Terrestrial Protected Areas are still very much stuck in the centrist framework governed by Law No. 41/1999 and Law No. 5/1990 and their implementing Regulations No. 34/2002 and No. 68/1998. On their part, Marine Protected Areas have recently found greater flexibility for management through the newly enacted Laws No. 31/2004 and No. 32/2004, as well as a spate of new regulations currently being drafted by the Ministry of Marine Affairs and Fisheries.

In the context of Terrestrial Protected Areas, there have been new initiatives to promote co-management systems. A new Ministerial Decree No. 18/2004 allows for broad parameters in co-management. To be sure, primary authority remains with the Ministry of Forestry. As for Marine Protected Areas, pursuant to the broad authority under Law. No. 32/2004 for regional sea jurisdiction,

regional governments now have the authority to manage coastal and marine resources within their jurisdiction – up to 12 miles for provinces and one-third of that for districts and municipalities. On the surface, it would appear that this includes the establishment of Marine Protected Areas. Again, this is untested and the authority is only implicit in the wording found in Article 18 of Law No. 32/2004.

As for co-management systems, there is perhaps no better example than Bunaken National Marine Park. The park is still officially governed through the Ministry of Forestry but, in 2000, a multistakeholder co-management advisory board was established, drawing representation from local and central government agencies, local dive operators and the local community. In addition, an entrance fee system was established, with approximately 70% of the fee used to fund joint patrols, and the remainder returned to local communities.

Other marine national parks such as Wakatobe, Bali Barat (BBNP), Komodo and Karimunjawa are all adopting some form of co-management mechanisms. In Bali Barat, for example, consultations with community members within and adjacent to the park were begun in 2000 with the help of the World Wide Fund for Nature (WWF). Two years later, joint patrols began and a co-management body was formed, called the Communication Forum of Coastal Concern Society for BBNP (*Forum Komunikasi Masyarakat Peduli Pesisir–FKMPP*). In Komodo National Park–despite much criticism over the role of TNC in managing the park–there have been new efforts to formally engage communities within the park (see Chapters 9 and 14).

More important than the co-management schemes in national parks are new initiatives taking place at the regional level. In North Sulawesi, 24 village-based protected areas were established between 2000 and 2003, based on four anchor sites set up during the period 1997–2000. These village-based protected areas were formalized through village ordinances, and then officially recognized at the district level through the enactment of Indonesia's first district-based law on coastal management (Patlis *et al.* 2003). This law was enacted by Minahasa District as Minahasa District Law No. 2/2002 on Integrated Community-Based Coastal Management. This, in turn, was followed by a law enacted by the province – Provincial Law No. 38/2003 on Integrated Community-Based Coastal Management. A two-month study is just being completed that analyses the status of these protected areas to determine their continuing viability. The results are mixed. Nevertheless, the precedent for the authority and mechanism for establishing village-based protected areas is a powerful one.

Also in North Sulawesi, the Municipality of Bitung is looking into protecting certain sites in the Lembeh Strait. It has recently prepared an academic draft summarizing the conditions and legal framework governing Lembeh Strait and

justifying the development of a new law to create protected areas within the Strait. In East Kalimantan, the Berau district government is on the verge of establishing the first district-based Marine Protected Area around the Derawan Islands, including Sangalaki and Kakaban, which already have some protection as tourist parks under the Ministry of Forestry. Lastly, in Alor District on the island of Flores, the District Head has issued a decree to establish a protected-area for whales, with an exception for traditional harvesting by Alor residents.

Protecting protected areas for the future

The common ingredient for these new initiatives is the presence of an outside catalyst, such as an NGO or donor-aid project. While such catalysts have helped to establish new co-management regimes or protected-area designations, the subsequent withdrawal of these catalysts also threatens the regime's sustainability. With the USAID-funded NRM project in the process of withdrawing from Bunaken National Park, it remains to be seen if this model, together with the co-management body and the joint patrols, are independently sustainable.

In general, these initiatives provide new opportunities for participation and transparency in management. They provide greater chances for recognition of community rights and access. They also provide greater possibilities for sustainable management. The marine initiatives also have the support of the Ministry of Marine Affairs and Fisheries. This support will likely be made official in the near future, with implementing regulations for the Fisheries Law being developed currently. It is likely that these regulations will explicitly authorize regional Marine Protected Areas.

To be sure, many challenges remain. Some of these include the very legal bases on which these initiatives rest. Another challenge is Indonesia's unique situation of 'maintaining transparency without accountability'.[5] People are aware of the problems, the corruption and the mismanagement, but little outrage or pressure is brought to bear on the issues. By the same token, the problems in the legal system remain widely known, but there is a deep complacency among the body politic and apathy among civil society, such that these problems persist. Fulfilling the promise for better resource management and well-functioning protected areas, and developing good laws on paper as well as good laws in practice, depend on solving these systemic problems.

Summary

The regional autonomy movement in Indonesia has created acute stress for its protected areas, both terrestrial and marine. In particular, the provision

for regional governments to enjoy the bulk of natural-resource revenues has led to serious overexploitation and mismanagement. This chapter analyzes the legal instruments that underpin regional autonomy and the jurisdictional and enforcement problems created as a result of legislative ambiguity. It also assesses the prospects of regional governments establishing and administering their own protected areas, in contrast with centrally established areas.

End notes

1. Citing BAPPENAS (National Development Planning Agency), 2003; Indonesian Biodiversity Strategy and Action Plan 2003–2020, p.26.
2. IUCN's definitions of each of these categories can be found at http://www.iucn.org/themes/wcpa/html. See also http://earthtrends.wri.org/pdf_library/data_tables/Bio2_2003.pdf.
3. For further research is an analysis of the percentage of protected areas (*kawasan lindung*) that is found within, and outside forest areas (*kawasan hutan*). Such analysis would provide greater insight into the jurisdictional reach of the Ministry of Forestry beyond forest lands.
4. These are drawn generally from the components of a law, as identified in Law No. 10/2004 on the Establishment of Laws.
5. As quoted by a World Bank official in Jakarta.

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27

Learning from King Canute: policy approaches to biodiversity conservation, lessons from the Leuser Ecosystem

JOHN F. MCCARTHY AND ZAHARI ZEN

'I notice the tide is coming in. Do you think it will stop if I give the command?'

His officers were puzzled, but they did not dare say no. 'Give the order, O great king, and it will obey,' one of them assured him.'Very well. Sea,' cried Canute, 'I command you to come no further! Waves, stop your rolling! Surf, stop your pounding! Do not dare touch my feet!'

He waited a moment, quietly, and a tiny wave rushed up the sand and lapped at his feet. ('King Canute on the Seashore' by James Baldwin.[1])

Introduction

In the early 1990s, BAPPENAS, the Indonesian National Development Planning Agency recognized that Indonesia's biodiversity is 'the country's greatest natural resource' (BAPPENAS 1993:3). In recognition of the significance of the issue, and in response to the international attention focused on it, during this period, Indonesian policy makers strengthened the country's legislative and policy framework to slow down the loss of primary forests and maintain biodiversity. In 1992, Indonesia joined 163 countries and ratified the Convention on Biodiversity. Yet, Indonesia continues to lose its biodiversity at an alarming rate.[2]

This chapter will consider the outcomes of state policy aiming to conserve Indonesia's biodiversity during the 1990s. At this time, Indonesian policy makers moved away from primarily relying on authority tools and direct

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government action to achieve biodiversity policy aims, including in national parks. Recognizing the lack of state capacity to achieve biodiversity conservation objectives, key policy documents advocated a raft of new initiatives to increase state capacity in national parks and other areas critical to biodiversity conservation. At the same time, there has been a move towards using more mixed approaches that rely on other actors – including non-governmental organizations (NGOs), universities and international donors – to assist in achieving policy goals. In their search for new, more effective solutions, policy makers began to experiment with new approaches, including decentralization of management responsibilities and integrated conservation and development (ICDP) initiatives.

To evaluate this shift in policy, this chapter will consider one of the most high profile ICDPs: the European Union's Leuser Development Programme, a project implemented in the Leuser Ecosystem. Located in North Sumatra and Aceh Provinces, this is one of the last largely intact areas of ancient Southeast Asian rainforest. It is also home to some of the highest biodiversity of plant and animal species in the world. We will evaluate the problems that faced this project and consider what policy lessons can be drawn from it.

The chapter will proceed in four sections. After first considering policy approaches to biodiversity conservation during the 1990s, the second section will discuss the problems faced during the implementation of the Leuser ICDP. Third, we will consider a specific example of the Leuser Management Unit's problems – the renowned Ladia Galaska case – before finally drawing some conclusions.

Policy approaches to biodiversity conservation

In Indonesia, as in many parts of the world, at least formally, the management of natural resources has predominantly been a state responsibility. Building on provisions in the Indonesian Constitution, the state has always seen itself as playing the main role as manager of the nation's natural resources.[3] Since the late 1960s, the government created many laws and policies to facilitate the large-scale exploitation of natural resources. Later, with the increasing prominence of the biodiversity conservation issue, the state also developed a legal framework to foster wise management and conservation.

During the 1990s, governmental policy began to place emphasis on the conservation and management of the environment. The government passed legislation in many sectoral fields to control activities that had an impact on the environment, to rectify environmental problems and to conserve biodiversity. Policy makers produced two major policy documents relating to biodiversity. The Government of

Indonesia (GOI) drafted the first, the Biodiversity Action Plan (BAP), in 1991. Prepared under the auspices of BAPPENAS, the plan was formulated in line with the Biodiversity Convention that Indonesia signed at the United Nations Conference on Environment and Development (UNCED) at Rio de Janeiro, in June 1992.

Following UNCED, and after widespread consultations with NGOs, universities and government agencies, in 1997 KLH (the State Ministry for Environment) and the United Nations Development Program (UNDP) produced Agenda 21-Indonesia, a National Strategy for Sustainable Development. This document was prepared as a long-term strategy for sustainable development that aims to be consistent 'with national priorities relating to poverty eradication, environmental protection and rehabilitation, sustainable resource management, and the participation of different segments of society in the decision-making process' (KLH & UNDP 1997:1). This document developed and refined the policies outlined in the BAP, setting out a long-term strategy for sustainable development. These two policy documents are the primary focus of the following discussion of biodiversity policy.[4]

Policy framework: defining the causes of biodiversity loss

The BAP and Agenda 21-Indonesia, the two key policy documents relating to biodiversity policy in Indonesia, recognize a complex cocktail of problems. The threats recognized include:

- increasing population pressure;
- poor land-use practices;
- national economic and development policies and poor implementation of regulations;
- shifting and pioneer agriculture, and associated forest clearing;
- conversion of forests to agricultural lands, mining areas, plantations and transmigration projects;
- disregard of land tenure and traditional utilization rights and the breakdown of traditional community management systems;
- contamination of natural ecosystems by industrial and domestic waste;
- unsustainable logging, overexploitation and poaching;
- introduction of exotics;
- other changes in land uses that occur as an increasing population struggles to meet its needs (BAPPENAS 1993; KLH & UNDP 1997).

In essence, conserving this biodiversity faced at least four underlying problems. First, the impetus for conservation is derived from outside actors – including

the UN system, the non-governmental and academic communities – who have inscribed environmental management ideologies, sustainable development and environmental planning discourses into various transnational policy documents and instruments. As nation states such as Indonesia concurred with these various international environmental treaties and agreements, transnational legal orders have impinged on how developing states conceptualize and frame environmental and development policies. These interpenetrating processes have helped secure the legal narrative underlying the state forest regime pertaining to nature conservation, particularly the preservationist model of nature conservation applied in the Leuser area (McCarthy 2006). Yet, with a large population and expanding economic needs, Indonesia lacked the critical political constituency required to support biodiversity conservation efforts.

Second, there was the issue of state capture. On paper, control over natural-resource use and management rested in the hands of the state and were administered by the state forestry agency. Accordingly, Indonesia had a *de jure* state property system: individuals and groups might use forest resources, but only with the approval of the Ministry of Forestry (MoF), the administrative agency formally responsible for carrying out the wishes of the larger political community. However, during the New Order, private interests were able to capture resource management nominally under the control of the state forestry apparatus. By co-opting or marginalizing state managers, the press, forestry experts, NGOs and local communities, these private interests ensured that forest management slipped beyond public control. Due to the intervention of ruling power interests and large-scale industries, these forest management institutions disregarded the legal rules. Ties at the pinnacle of the state distorted policies and weakened the supervision of middle- and lower-level officials leading to a culture of 'corruption, cronyism and nepotism' in the management of natural resources (McCarthy 2000).

Third, in many areas the state had allocated property rights to commercial interests in areas where local communities had existing customary (*adat*) property claims. The state allocated forest areas for exploitation or for conservation under the *de jure* disposal of the MoF based on a mapping exercise that failed to take into account de facto local property regimes – the customary (*adat*) concepts of territoriality and land tenure in use among the local communities surrounding the forests. This exercise made the MoF and its line agencies in the regions responsible for managing the huge area classified as 'state forest' (*hutan negara*) – around 75% of the nation's surface area. However, despite the formal property rights that the state agencies have allocated, commercial interests and national park authorities wishing to control forest areas needed to come to

terms with local communities and their *de facto* property systems. Where the MoF has allocated land considered by local communities to be subject to local property claims, there has often been conflict with local communities that confounded effective management (McCarthy 2000).[5]

Fourth, while the government has set up an extensive protected area system to manage the extensive biodiversity and protect key ecological functions, the authorities were unable to effectively manage such an extensive area. In many cases these areas are protected only on paper.

Indonesian experience here resonated with other parts of the world. By the early 1990s, the approach that relied on protecting national park areas legally and enforcing this protection via policing was seen to have failed internationally (Wells *et al.* 1992). As poor local communities carried the costs of livelihood foregone due to lost access to these areas, protected areas such as national parks faced a legitimacy problem. Therefore, as the authors of an influential report noted, it was found that the 'fines and fences' approach was 'neither politically feasible nor ethically justifiable' (Wells *et al.* 1992).

In Indonesia, the forestry department deployed park guards to prohibit land pioneering and the taking of timber and other forest products. Like King Canute who is celebrated for trying to hold back the tide, the forestry department's conservation agency (PHKA) could not stand against the rush of villagers whose activities were classified as 'forest encroachment' or others who simply wished to exploit these rich natural areas.

These combined factors led to the widespread failure of policy in this area. For instance, despite the stated policy aims of maintaining areas classified as 'permanent forest', deforestation rates increased over the 1990s to over 1 million hectares per year.[6] In the last ten years, Indonesia has lost up to 20 million hectares of its forest cover due to logging and tree-crop conversion. At the same time, 'Indonesia has more species threatened with extinction than any other country, with 128 mammal species and 104 bird species under threat'.[7] This problem was exacerbated when, during 1997 and 1998, some of the most extensive forest fires witnessed in the century ravaged the Indonesian islands of Kalimantan and Sumatra, burning some 7 to 10 million hectares of forest and agricultural land.[8] During the 1990s, logging practices outside the legal regime for accessing timber were widespread, occurring in all classes of state forest, including officially designated 'protection forest' and national parks set aside for conservation. Especially after authority systems collapsed at the end of the New Order, local networks of power and interest benefited from uncontrolled logging while generating revenue for district coffers. As a consequence, the forest authorities had effectively failed to implement the strictures of the state forest regime.

Policy responses

Policy instruments are the means by which governments attempt to put policies into effect, that is, the tools or devices for implementing policies (Howlett & Ramesh 1995).[9,10] As particular policy instruments take their meaning from the particular legal, social and cultural context in which they operate, the social and cultural context is extremely important (Eckersley 1995). Authority tools involve statements backed by the authority of government that grant permission, prohibit or require action under designated circumstances (Schneider & Ingram 1990).

Law – using legislative power – is a key policy instrument (Bridgeman & Davis 1998). By the 1990s, the Indonesian government had generated a large number of laws, regulations and policy statements relating to natural-resource management. These form a framework that is meant to guide the behaviour of agencies and officials at all levels. The key law for biodiversity conservation is the earlier Law on the Conservation of Living Natural Resources and their Ecosystems (UU 5/1990). This law 'stresses Indonesia's commitment to conservation of its biological resources and provides a legal basis for the enactment of national parks' (NRMP & BAPPENAS 1994).[11] Together with other laws, this superseded several obsolete colonial regulations and provided for a number of new protected area categories and methods as well as a zoning system for national parks, e.g. providing for 'traditional use zones'. These laws maintain that the state will play the primary role in conservation: as one clause states, 'the government will lead and mobilise its citizens to participate in conservation of living resources and their ecosystems'. Consequently, the law has been seen as overly 'top down' (NRMP & BAPPENAS 1994).

The problem, according to the BAP, was that existing laws generally needed to be more rigorously applied and the Conservation Law also needed to be backed up with implementing regulations (BAPPENAS 1993:48–49). Moreover, critics have noted that this law failed to provide for the land rights of local communities living either inside or adjacent to many protected areas: 'in implementing the Act, the government may cancel land rights, *adat* or otherwise, giving compensation under current law' (Barber *et al.* 1995:14). As the BAP recognized, the revision of laws relating to ownership, access and management of natural resources remained a necessity. While this policy fell short of advocating the wholesale recognition of the property claims of local communities, it is a step towards helping to overcome the conflicts resulting from overlapping property claims discussed earlier.[12,13]

Further, as a 1995 report noted, as the conservation laws were 'superimposed on existing laws and policies and are not yet fully operational, their eventual

impact is difficult to judge'. In fact, the body of law and policy supporting conservation has been at odds with that supporting economic development. This has been 'both a cause and an effect of systemic conflict between conservation and development objectives and actions on the ground' (Barber *et al.* 1995:13). This inconsistency has continued to haunt later policies. For example, in 2004, the government issued a regulation to amend the forestry law (UU No. 41/1999).[14] Consequently, 13 companies were allowed to exploit 927648 hectares (or 2.76%) of the total protected area in Indonesia.

In articulating the state's key response to biodiversity loss, the protected areas system would be the cornerstone of Indonesia's strategy for conserving its most valuable ecosystems in the face of rapid environmental change. Indeed, the BAP recommended establishing an integrated protected area system covering all major terrestrial habitats that approximated 10% of Indonesia's land area. By 1997, Indonesia had on paper created one of the most comprehensive protected area systems in Southeast Asia. There were 368 protected areas including 34 national parks. These gazetted areas covered some 19.4 million hectares or 8.2% of the total land and coastal areas of the country. However, many parks existed more on paper than in the field, and most had not been surveyed or mapped and did not have clear boundaries.

Agenda 21

Capacity remained a central problem. Governments seeking to achieve a policy goal choose to have state agencies act directly, for instance, by delivering services to target populations (Bridgeman & Davis 1998). The Biodiversity Action Plan listed several policy tools that depended upon direct government action or provision. Yet, given the area of the state forest zone, there were very few resources available for forest protection. For instance, there were 8500 forest guards (*jagawana*) responsible for policing over 100 million hectares of the 'state forest zone'. This meant that it was impossible for forest guards to realistically protect the forest merely by applying a law enforcement approach. While the government's conservation agency might experiment with innovative approaches such as co-management, it generally lacked the budget to support new initiatives. Moreover, insufficient staff training and management skills compounded the problem. As the BAP noted, 'most agencies lack adequate trained or qualified staff even though the total work force seems large' (BAPPENAS 1993:57).

Other constraints facing managers included low local community participation, inadequate management frameworks and excessive centralization of management. As PHKA and other agencies had insufficient capacity to implement policy in

many areas, Agenda 21-Indonesia advocated many policy initiatives to strengthen the capacity of these state agencies. Clearly, funding is a key resource that can be deployed to support policy aims: spending and taxing powers can be used as a policy tool to build capacity and help support policy implementation (Bridgeman & Davis 1998). The Biodiversity Action Plan acknowledged the funding constraints facing government policy makers, conceding that state budgets were already overstretched and unable to be applied extensively to protecting biodiversity.

Incentive tools assume people lack incentives to take the actions needed, and seek to create inducements, charges, sanctions or even force to encourage compliance (Schneider & Ingram 1990). Incentive tools have also been used to support biodiversity conservation. For instance, Agenda 21-Indonesia recommends improving people's socioeconomic conditions by involving them in development and providing benefits from protected areas and recognizing traditional rights to utilize resources.[15] As discussed later, incentive tools also became a key part of the ICDP strategy.

'Mixed instruments' include a range of instruments involving varying levels of state and private provision (Howlett & Ramesh 1995). The Biodiversity Action Plan and Agenda 21-Indonesia advocated a range of mixed instruments involving differing levels of involvement from various stakeholders. For instance, the BAP:

- invited international donor agencies to assist with priority conservation activities;
- encouraged the participation of NGOs and community institutions and suggested that biodiversity policy needed to find ways to strengthen their effectiveness;
- advocated that local authorities working with local agencies and NGOs play a primary role in managing protected areas and buffer zones;
- called for the active participation and support of local communities seen as the '*de facto* managers' of natural resources (BAPPENAS 1993; NRMP & BAPPENAS 1994).

The move to a more mixed approach to policy instruments represented a significant change in emphasis. As noted earlier, historically the state has seen itself as playing the main role in the management of natural resources. As all forest land and marine territories are under state management under the law, for many years there was a tendency towards deploying authority and, specifically, regulatory policy instruments. This was apparent in forest management with forestry agencies attempting to 'close off all public access to protected areas, criminalize encroachers and largely ignore the adjacent area's socioeconomic dynamics or demands' (Barber *et al.* 1995:3).[16] Given that the evidence

suggested this was not working, by the early 1990s at least, state planners were open to new approaches.

Schneider and Ingram (1990) have noted that in certain circumstances, policy makers may recognize a problem but there may be no agreement or clear understanding of how to deal with it. In this situation, policy makers may begin to experiment with different policy approaches. As the state lacked the capacity to manage the nation's extensive protected areas, policy makers have become increasingly willing to experiment with new approaches, generating space for local-level conservation initiatives, including the widely discussed ICDPs.

At this time, international conservation agencies and multilateral donor agencies were supporting ICDPs as a means of achieving biodiversity policy aims, an approach that depended heavily upon incentive tools. As an influential World Bank report (1994) noted, ICDPs are built upon the recognition that when protected areas are created, local people lose access to rich local forests sometimes previously considered to be the common property of the local community. In other words, the gazetting of forest areas as protected areas outlaws local resource uses, provoking resentment and even resistance (in the form of poaching and logging) among neighbouring communities (Wells *et al.* 1992). Integrated conservation and development projects work on the premise that some appropriate set of incentives exists to induce local communities to change their practices. Brandon and Wells (1992) have distinguished three main strategies employed by ICDPs:

- strengthening park management and/or creating buffer zones around protected areas;
- providing compensation or substitution to local people for lost access to resources;
- encouraging local social and economic development.

When utilizing these strategies, ICDPs have used a range of incentives and disincentives to conserve biodiversity, including direct cash incentives, fees, rewards, compensation, grants, subsidies, credit and employment as well as improved law enforcement (Brandon & Wells 1992).[17]

Indeed, Agenda 21-Indonesia advocated the need for projects piloting ICDP-type activities in key priority conservation areas – including establishing a key park in each biogeographical area. These pilot projects would foster cooperation between local-level PHKA staff, NGOs, and local communities and the local government in the management of regional development and the mobilization of funds. It is clear that these are learning tools. The ICDPs would try out different management approaches and interventions, including traditional

management patterns as one alternative. Policy makers would 'monitor and evaluate various management patterns in a bid to determine the management structure most appropriate for each conservation area' (KLH & UNDP 1997:481). At the same time, Agenda 21 advocated that authority be decentralized and local governments, communities and NGOs be given a greater role in the management of protected areas (KLH & UNDP 1997:481).

During the 1990s, ICDPs became Indonesia's main approach to biodiversity conservation. In a review of ICDPs across the country, Wells *et al.* (1999) found that there were already more than 12 ICDPs at various stages of implementation. Foreign donors had pumped some US$130 million into ICDPs covering some 8.5 million hectares of the nation's conservation estate. In addition, several ICDPs were also in preparation, projects that were expected to attract another US$200 million in loans and grants (Wells *et al.* 1999:2). After its inception in 1995, the European Union-funded Leuser Development Programme became one of the most high profile ICDPs in Indonesia.

The Leuser ICDP

The reasons why the Gunung Leuser Ecosystem has attracted so much attention are clear: this is one of the last remaining places where endangered Sumatran tigers, orang-utans, rhinoceroses and elephants exist.[18] The wider 2.6-million-hectare 'Leuser Ecosystem', encompassing the Gunung Leuser National Park, is known to biologists as one of the most outstanding natural ecosystems in the world. The Leuser Ecosystem is made up of coastal beaches, lowland swamps, degraded lowland rainforests, extensive pristine mountain forests and isolated alpine meadows and is crowned by a 3140-metre mountain of the same name.

As early as 1935, the colonial government responded to lobbying from Dutch conservation NGOs and established a large wildlife reserve at Leuser. In 1980, in response to the representations of international conservationists, the Indonesian government re-established a state mandate for conserving the area by establishing the country's first national park here – the Gunung Leuser National Park (GLNP). In recent years, conservationists have lobbied for the Leuser Ecosystem to be listed as a World Heritage site. As in other cases, non-state actors including scientists, scientific organisations and environmental pressure groups have provided the impetus for environmental regime formation.

In the 1980s, Leuser became a primary focus of World Wide Fund for Nature (WWF) activities, becoming the largest WWF project in Indonesia. Nonetheless, conservation programmes in Leuser had clearly failed to avert environmental decline. In 1989, the World Conservation Union (IUCN) declared GLNP as one of

the ten worst-managed parks in Asia.[19] According to one estimate, in 1985 alone at least 229570 hectares of forests in the Leuser area were destroyed and 27410 hectares of land deforested.[20] The problems in the Leuser area apparently exemplified those resulting from overreliance on authority tools – the 'fines and fences' approach to conservation noted earlier.

In 1989, a World Bank-funded team of ecologists visited the Leuser area as part of a technical assistance project. Drawing on a then influential World Bank report on ICDPs in Indonesia, the ecologists drafted a proposal for an ICDP. This proposal gained the interest of the European Union. After discussions at the Rio summit and other high-level biodiversity meetings, the EU agreed in May 1995 to provide US$40625000 over a seven-year period to support a Leuser ICDP. To meet this commitment, the Indonesian government committed US$22500000 in equivalent local currency from the Ministry of Forestry's Reforestation Fund.

The Leuser Development Programme Master Plan differentiated three categories of problems facing the Leuser Ecosystem. The first category, 'rural pressures', delineated the extensive socioeconomic factors driving the demand for land and forest resources and stimulating the rapid conversion of the forest into other land uses. Working on the premise that some appropriate set of incentives exists to induce local communities to change their practices, like other ICDPs, the Leuser project sought to deploy 'incentive tools' and 'socio-economic investment tools' to encourage compliance with pre-established conservation goals.

The second category, 'inadequate institutional performance', concerned the failure of regulatory policy instruments. This encompassed the low priority given to conservation by a ministry primarily focused on forest exploitation and the 'ineffective organization' of PHKA, the agency charged with managing the conservation area. To overcome this lack of capacity, for the first time in Indonesia, the government delegated the management of a conservation zone to a private non-profit making organization, the Leuser International Foundation (LIF) for seven years. The Leuser International Foundation would delegate its implementation function to the LMU.

The third category, 'ecological inadequacies of the conservation area', referred to the 'poor design' of GLNP. A variety of project activities were developed to address these problems. The Indonesian government granted the seven-year Leuser 'Conservation Concession' for the state forest land known as the 'Leuser Ecosystem' – a conservation area designed according to ecological considerations that encompassed the original national park and surrounding areas.[21] In other words, the project attempted to re-articulate the state territorialization strategy for the area more clearly along ecological lines. Making use of all

available authority tools, LMU would intensify state resource control strategies with intensified paramilitary law enforcement (McCarthy 2006).

We will now consider how two categories of problems afflicted the Leuser ICDP: institutional problems and inappropriate approaches with local communities.

Institutional problems

A series of institutional problems plagued the Leuser ICDP. As noted above, the funding for the ICDP proceeded following government-to-government discussions at the Rio summit and a formal request from the state planning agency (BAPPENAS) to the EU. According to agreements entered between the EU and the Government of Indonesia, the LMU had to primarily work through state structures. This structural dependence – sustained by state regulations – led to a series of problems.[22]

The Leuser Master Plan aimed to employ incentives, particularly development activities – intensified agriculture, ecotourism and sustainable harvesting of forest produce as well as the alleviation of isolation. All these were designed to reduce pressure on the reserve. The ICDP aimed to establish a linkage between development and conservation. This linkage would be established by 'quid pro quo agreements' that would offer 'support for development in exchange for commitment to conservation'.

To this end, the LMU heavily depended on local government agencies to implement development programmes that would provide for economic growth outside of the protected area boundaries and to compensate local people for their lost access to forests. This meant that community development activities were tied up with government agencies. These agencies worked according to a paternalistic New Order bureaucratic culture that had little or no understanding of community development approaches and was particularly ill-suited to implementing community development programmes. Moreover, according to a variety of sources, community development projects tended to be implemented through clients of government agencies. In the process, large amounts of the LMU money 'leaked'.[23] Consequently, many alleged that the LMU's development activities had very little benefit for 'target communities'. Consequently, the economic incentives deployed by the LMU largely failed.

Given that the Leuser project had emerged from international negotiations, LMU enjoyed access to central figures within the Suharto and Habibie administrations. At times, the LMU could make interventions using this influence against the interests and decisions of local governments. In trying to lock up resources in the Leuser Ecosystem in the face of developments it considered to

be unfavourable to conservation, the LMU aroused considerable resentment among local actors. Relations between the LMU and other NGOs were coloured by jealousy and mutual suspicion.[24] At the same time, the Leuser Master Plan focused on the institutional inadequacies of the Ministry of Forestry's conservation arm, arguing that this actor lacked the capacity to protect Leuser. Accordingly, in gaining a 'conservation concession' for Leuser, the LMU believed that it had a mandate to become the primary agency responsible for conserving the area. This led to competition with state agencies, particularly the conservation agency, leading to considerable problems for the LMU.

The government had already issued many timber concessions and plantation licences inside the Leuser Ecosystem. However, the LMU lacked the authority to cancel existing licences or even prevent new licences from being issued. For instance, in South Aceh, oil-palm plantation licences (HGU) were 35 years in duration and could not be cancelled unless the LMU compensated for the property rights that had been allocated. These concessions also provided revenue for local governments: would the ICDP then pay the local government taxes on areas turned back into forests? The local government received land taxes on plantation areas and other benefits. Consequently, despite the extension of the Leuser Ecosystem to 2.6 million hectares, the LMU lacked real authority over many land-use decisions.

Paradoxically, while the LMU lacked law enforcement capacities, the Leuser Master Plan envisaged using state enforcement agencies to tighten law enforcement. Ultimately, this left the LMU dependent on state-led, authoritarian enforcement practices by the police and the military. Yet, law enforcement agencies – including the military and police – were heavily involved in logging activities. According to some reports, the military only received 30 to 40% of the funding it needed to operate in Aceh. That encouraged the soldiers to come up with other solutions to make ends meet – encouraging corruption and illegal businesses. For many years, the military has allegedly had an interest in the extra-legal logging system that operates extensively across Aceh and North Sumatra.

Therefore, a range of problems relating to the management of the Leuser Ecosystem emerged from the LMU's intercourse with governmental agencies, including the military and the forestry department. These agencies were still active players in a corrupt and collusive system of exchange and accommodation that has defined Indonesia's natural resource practices for the last three decades (McCarthy 2006).

The evidence for this is abundant, but we will cite just one incidence – the case of KUD Sapo Padang in Langkat Region of Leuser National Park. Here, a timber company, PT Amal Tani, operated a partnership with a community

cooperative, KUD Sapo Padang, involving three villages. In the name of the KUD, the company applied for a licence from MoF to develop a road to the village, on the premise that the road would provide infrastructure. A military foundation for the regional military command (Pangdam Bukit Barisan) joined the venture, ostensibly providing 'security' for the cooperative, presumably in return for a share of illegal logging profits. Without bothering to apply for a plantation licence, or conducting an environmental impact assessment, land was cleared. KUD Sapo Padang/PT Amal Tani began developing oil palm nurseries for a nucleus estate of 400 hectares for supporting a 4250-hectare 'satellite' (plasma) smallholder development. Most of this land had slopes of between 40% and 90%. In fact, the project involved manipulating community land rights, because only one of the three villages (with 33 households) claimed rights in Sapo Padang. The people in Sapo Padang were descendants of former Acehnese guerrillas who had fled into the forests and then opened farming areas within park boundaries. As two locations named Silayang-layang and Simberlin had been abandoned in 1953, they were no longer occupied. Consequently, this area had been returned to Gunung Leuser National Park. LSM Genetika UISU, supported by the LMU, brought the illegal logging case to court and won. However, the logged-over area was not rehabilitated.

In fact, the oil palm development was a pretext for building a road whose direction and length was changed in the course of construction to facilitate the theft of timber. Those involved took timber 100 metres to the left and right of the road, even though they were only entitled to take timber 10 metres from either side. Rivers and streams became logging roads and a few became dams. Consequently, the project greatly damaged the watershed for the Langkat region.

Political tensions within Aceh following the re-emergence of an insurgency movement exacerbated the LMU's problems. In September 1999, South Aceh exploded into anarchy and rioting, forcing the evacuation of all staff from LMU's Suaq-Balimbing Research Station. At this time, 270 people were injured and three staff of the Center for International Forestry Research (CIFOR) died (Zen 1999).

Inappropriate approaches to rural communities

The Leuser Management Unit gained a conservation concession from the central government for the Leuser Ecosystem with the objective of setting up an effective property regime in what they perceived to be an open access situation – a vacuum where the state property regime failed to operate. Mapping the Leuser Ecosystem according to ecological criteria would serve as a

basis for a new system of territorial control worked out according to ecological principles.

This was inherently rational from an ecological perspective. Yet it failed to consider local *adat* territories: the new 'Leuser Ecosystem' had no basis in the territorial concepts of local communities. Based on state assumptions that most of the area was forestry estate, the Leuser Master Plan amounted to mechanisms of resource control. It tied up resources for resource-dependent communities, while failing to address the problem of overlapping property regimes.

In the course of implanting its territorial strategy of resource control, the LMU placed signs marking the boundaries of the ecosystem in North Sumatra and Aceh. Villagers took out and threw away thousands of these signs. Villagers rejected the LMU's strategy of territorial control, believing that the LMU would control their lands. While community consultations and cooperation would have been extremely important, the contractor working for Leuser simply worked with the map provided without looking at the reality in the field. Some employees involved in the implementation of this activity left their jobs because they were afraid of being attacked by local villagers.

The Leuser Master Plan treated local people in the core areas of the ecosystem as trespassers or 'encroachers' within the protected area. It accepted the presuppositions of state forestry policy, arguing that the key problem lay with the capacity of PHKA to implement these policies rather than the policies themselves. Accordingly, it attempted to create a new capacity to implement biodiversity policy. This occurred without intensive consultations with local actors who might have been able to represent and articulate local concerns. Yet, from a village perspective, many interior areas were included in long-standing *adat* territories (McCarthy 2006). Overall, the LMU's programme was based on scientific and managerial concepts and explanations. These remained remote from local understandings of the role that the forestry estate played in village livelihoods. The livelihood logic of poor resource-dependent communities in many cases depended on a 'subsidy from nature': what the LMU might consider 'encroachment' and 'illegal logging' were uses which communities with long-standing land-use claims might consider as *adat* rights. The logic of rural life could not easily be reconciled with the LMU's project rationale. This inevitably created a legitimacy problem.

Further, the law enforcement efforts in Leuser involved enforcing a conservation mandate based on national legal rules on conservation. At the same time, these laws lacked foundation in the local normative world. Law enforcement depended on regulatory policy tools, while local social orders so often worked according to a different logic. This resulted in intractable conflicts with local communities. As a result, the LMU was unable to enforce

law or apply sanctions effectively against loggers and those 'encroaching' into the ecosystem. For resource-dependent agrarian communities, the Leuser Ecosystem enforcement activities were manifested as territorial control strategies without any local legitimacy.

The Leuser Management Unit has been criticized for its failure to control illegal logging, but its authority was severely restricted. The LMU has no authority to prosecute. This remained the domain of the Ministry of Forestry, the police, the military and the judiciary. In addition, Indonesia's legal structure was only weakly devised for ecological protection, and this tended to protect those extracting timber outside of the law. Between 1996 and 2004, none of the LMU's antilogging operations led to the prosecution of actors who had violated regulations.[25] From 24 large-scale 'integrated operations' undertaken with LMU funding involving a range of law enforcement agencies, only three cases were ever prosecuted in court. The others were 'lost' (*hilang begitu saja*). The police failed to take many to court, and others failed to make it past the prosecutor's office, either due to 'lack of evidence' or because these actors themselves became embroiled.

In accordance with the ICDP's 'policy narrative', the LMU project sought to find 'incentives' to reduce pressure on forest areas. The quid pro quo approach involved using economic incentives and compensation as a means of 'buying' community cooperation. However, the quid pro quo approach could not resolve the property rights issue or reconcile differing views of land and resource use. Rather than negotiating project goals in context, the project set about implementing a-priori conservation goals. 'Participation' here was only elicited in an instrumental fashion in order to better implement pre-set project goals. Villagers remained removed from the decision-making and policy-making process, and the totality of their concerns, values and knowledge systems remained invisible to the management process (McCarthy 2006).

The Ladia Galaska controversy

The problems facing the conservation of Leuser came to international attention during the Ladia Galaska controversy. Despite the shift to special autonomy in Aceh, under the central government's new framework forestry law (UU 41/1999) the responsibility for national parks remained with the central government. With special autonomy in Aceh, the provincial government now gained extensive discretionary authority. This had effects on environmental management, especially because central government agencies, including the Directorate-General responsible for national parks, had to coordinate with local authorities who were generally more concerned with raising revenue than with

conservation. With such an extensive area of Aceh remaining locked up in the national park, the Aceh provincial government could mount a populist drive for development, claiming that the national park was against the desires of the Acehnese for economic advancement. Clearly, as elsewhere in Indonesia, the idea of logging these rich areas to provide revenue and largesse for local patrons and their political machineries was hugely attractive to the newly empowered provincial government. The fragmentation of state authority in the post-New Order period, together with the protracted guerrilla war in Aceh, also provided the context for a new challenge to centralized state control over the Leuser area.

On 6 August 2001, the Aceh provincial government decided to build a road connecting the east and west coasts of Aceh and cutting across vast forest areas of the Leuser forest. The project, known as Jalur Ladia Galaska (Lautan Hindia-Gayo-Alas-Selat Malaka) involved constructing 505 kilometres of primary road and a 1082-kilometre network of feeder roads in and out of the main highway. As well as upgrading existing roads (such as ex-logging roads), Ladia Galaska would build a series of new roads across the ecosystem and the Leuser National Park. Drawing on national and provincial budgets over five years (2002–2008), Ladia Galaska was projected to cost US$179.5 million.

Many actors within Indonesia and outside, including the LMU, opposed the project. They argued that the road would facilitate land pioneering into pristine areas, the logging of protected forest areas, the fragmentation of animal habitats, such as that of the orang-utan, and also the cutting of an important elephant migration route. According to one estimate, constructing the road through this forest would lead to the logging and clearance of between 400 and 2400 hectares for each kilometre of road constructed.

According to national law, construction of a project of this type should begin only after an environmental impact assessment (known as AMDAL in Indonesia) is conducted. Moreover, spatial planning and conservation laws prohibited construction activities inside protection areas.[26] In contravention of these laws, the provincial government allowed contractors to begin building the road a year before an AMDAL was carried out. When the AMDAL process finally began, there were a series of procedural irregularities. For instance, the project was revised repeatedly, and the direction of the road was moved to cut across other areas of protection forests.[27] The contents of the AMDAL were also inappropriate. The AMDAL analysis failed to use scientific methods to consider the ecological impact of the highway. In contrast, an LMU study using Citra Lansat data showed that Ladia Galaska would cut through many areas with slopes in the range of 40–60%. Road construction here would affect catchments areas vulnerable to high intensity flooding, areas that were highly susceptible to landslides, erosion and irrigation failure. Consequently, the AMDAL failed to compare the impact on

fresh water supplies, fisheries, flood protection, agriculture, tourism, biodiversity, non-wood forest products, hydro-electricity and carbon absorption, relative to the economic improvements provided by the highway.

In supplying scientific analysis of the Ladia Galaska development, the LMU attempted to have a dialogue and discussion among key stakeholders, including the national and provincial parliaments. The Leuser Management Unit also supplied documentation regarding the inadequate legal basis of the development. Alternative routes for the road were also proposed, which would provide socioeconomic benefits and overcome the isolation of villages in the area while reducing the economic costs and ecological risks (Table 27.1).

Table 27.1 compares the two alternatives proposed by the LMU. The alternatives would connect more villages while decreasing the ecological impact, for instance, by skirting around conservation zones and areas with an incline of more than 45 degrees.[28] Despite the alternatives put forward, construction of the Ladia Galaska road continued.

The project clearly worked to the material benefit of particular interests. The development involved logging areas 50 metres to the left and right of the road, and the provincial government would grant contractors land clearance licences (IPK) for this purpose. Even discounting the possible misuse of the IPK permits, the contractors could gain access to large amounts of high value timber. The route favoured by the provincial government cut through pristine areas, making it much more profitable than the two alternatives proposed by the LMU. An alliance of 21 NGOs protested against military involvement in the development, pointing to the vested interests behind it. The involvement of TNI (the Indonesian Armed Forces) in the timber sector in Aceh was an 'open secret'.[29] This was demonstrated when three generals representing the Head of Indonesian Ground Forces (Kepala Staf Angkatan Darat) made a well-publicized visit to one section of Ladia Galaska to support the project's continuation.

The decision-making process was also highly political in nature, with various agencies within the national government developing different positions on Ladia Galaska.[30] The Ministry of Settlement and Regional Infrastructure (Kimpraswil), the Ministry of Internal Affairs and the provincial and district governments all supported the project. The coalition of NGOs opposed to Ladia Galaska charged that there were indications of corrupt and collusive dealings in lobbying among officials in the agencies concerned. National government funding for the project had been transferred to the provincial government before the project had been publicized openly and before an AMDAL had been undertaken. The government also granted a tender to continue construction into 2003 although the AMDAL had not yet been finalized.

Table 27.1 *The Ladia Galaska project and alternative routes*

	Ladia Galaska route (Meulaboh – Simpang Puet – Jeuram – Lhok Seumot – Celala – Simpang Pasir – Blangkejeren – Pinding Lokop – Peureulak)	Alternative 1 (Meulaboh – Simpang Puet – Jeuram – Pameuh – Takengon – Simpang Tiga redelon – Alue Ie Mudek – Lhok Seumawe)	Alternative 2 (Meulaboh – Simp Jeuram – Pameuh Simpang Tiga red Mudek – Peureula
Connect West Coast (Indian Ocean) – East Coast (Melaka Strait)	Yes	Yes	Yes
No. of villages connected by new road	23	45	137
Length of main road	504km	329km	377km
Environmental Areas affected:			
• Protected Forest	94km^2	69km^2	69km^2
• Conservation Area	5km^2	0km^2	0km^2
Geophysical factors:			
– Slope >40%	42km^2	0km^2	0km^2
– Topography >1500m asl	46km^2	11km^2	11km^2

ource: LMU Letter No. 255-COD.ID/Gubernur-NAD/04/02 to NAD Gubernur.

At the same time, the national planning agency (BAPPENAS), the Ministry of Environment and the Ministry of Forestry opposed Ladia Galaska.[31] At this time, the TNI was fighting a separatist conflict in Aceh. Discussion of Ladia Galaska became tied up with the central government's wish to avoid the impression that it had no interest in developing Aceh. This political atmosphere made it difficult for government agencies that disagreed with Ladia Galaska to express public opinion against the project based on environmental concerns. Consequently, most opposition focused on the need for an objective AMDAL that would impartially assess the costs and benefits of the project rather than legitimize a decision taken in advance by the provincial government. The president at the time, Megawati Soekarnoputri, favoured the project. Despite NGO lobbying of the DPR (House of Representatives) and various government agencies, the project continued.

The local communities in the areas concerned remained marginal to the debate. Despite the LMU microdevelopment projects discussed earlier, the poverty level remained similar to before the US$30 million Leuser Development Programme began. The need to conserve Leuser remained remote from their concerns. At the same time, villagers were typically suspicious of outside institutions concerned with conservation and supporting state-sponsored territorial control of their area, particularly the forestry agencies. This was even more so for the LMU. Despite its promises and the amount of funding at its disposal, the LMU had failed to bring development to surrounding communities after seven years. Meanwhile, it had attempted to tighten territorial control strategies that were enforced against local communities.[32]

Non-governmental organizations tended to see the Ladia Galaska problem as an expression of elite political concerns rather than of the economic struggles of isolated villagers. This was demonstrated by the reality that, although the alternative routes would have better connected isolated villages without the associated environmental risks, these routes were vetoed by the provincial government. The LMU's arguments concentrated on ecological considerations and the impact of Ladia Galaska on Indonesia's international image. These arguments held little water with politicized district elites and local government actors who had for some years gained from the logging of Leuser forests. These actors opposed the LMU for attempting to lock-up development in their region without (as they argued) providing anything in return.

In 2005, the government put the Ladia Galaska project on hold. In the 2004 election, a new administration had come to power. The new president, who had been elected on a mandate to stamp out corruption and illegal logging, acknowledged the sale of logging concessions in Aceh. Yet, the new government has yet to raise the question of military involvement in logging.

In December 2004, a tsunami struck Aceh, and all funding for Ladia Galaska was reappropriated for rehabilitation. Meanwhile, Indonesian courts sentenced the highly corrupt governor of Aceh, Abdullah Puteh, to ten years in jail. By then, considerable damage had already been visited on the Leuser Ecosystem. At present, some sections of Ladia Galaska have actually begun to be constructed.

Conclusion

As discussed in this chapter, policy documents from the 1990s demonstrate that state planners understood the complex range of problems undermining biodiversity conservation policies, including the national park approach. A careful reading of these documents points to a tacit acknowledgement that existing policy approaches were unlikely to succeed. Consequently, policy makers were open to experimenting with new approaches, particularly the ICDP policy model. As implemented in Leuser, this model involved combining more effective incentive tools with a more effective application of authority tools in a protected area redesigned according to ecological principles. Despite the apparent appeal of the project design document, the underlying problems bedevilling biodiversity policy and national parks have re-emerged.

In a fashion reminiscent of similar projects around the world, the LMU sought to extend and intensify state territorial control strategies that involved locking up a rich and extensive forest area. However, legitimacy is socially constructed within the bounds of existing social and cultural norms. Enforcement might be legitimate if it was backed up by agreements that have been carefully negotiated by agencies that were accountable. But neither local rural communities nor regional governments supported a 'foreign' preservationist ethic that set aside local resources for conservation. In many cases, this strategy attempted to tie up resources used by poor villagers, working against customary (*adat*) understanding of territoriality and land tenure that supported the livelihoods of the village poor.

This legitimacy problem became more explicit because entrenched networks of exchange and accommodation dominated state decision-making and management processes, allowing corrupt networks to continue logging and mining the area with impunity. Meanwhile, territorial strategies of resource control were invoked against villagers. Accordingly, governance problems plaguing the Indonesian state undermined the LMU's attempt to implement legal rules pertaining to the management of the rich natural resources found in Leuser.

The Leuser Management Unit attempted to provide an appropriate set of incentives through microprojects designed to induce local communities to change their practices. This involved quid pro quo agreements offering compensation or substitution to local people for lost access to resources and encouraging local social and economic development. Problems emerged in the implementation of these microprojects, undermining their success. Moreover, the simple fact is that the benefits that LMU microprojects offered were scarcely comparable to the opportunity costs foregone by villagers who might be shut out of the Leuser forests. The Leuser Management Unit could not provide sufficient incentives to support sustainable livelihoods or to alter attitudes and behaviour on a significant scale (McCarthy 2006). Participation, were it to occur, could only involve eliciting participation in pre-set conservation goals.

The Ladia Galaska case demonstrated how, in the name of economic development, vested interests could push a large-scale project that directly contravened biodiversity policy. Behind the developmental rhetoric supporting it, this project involved mining forest resources in a highly valued ecological area of international status – virtually the only extensive area of natural forest left in Sumatra. It occurred without considering the long-term impact on the area or on local communities. This took place despite Indonesia's commitment at Rio, its well-developed framework of environmental laws and policies supporting biodiversity conservation, and a very large international investment by the European Union.

The Leuser case raises two salutary questions. First, is the preservationist model appropriate in Indonesia? The model is based on assumptions inscribed in both national law and in the international conservation philosophy that aim to conserve pristine nature. Can these approaches ever achieve the social and cultural legitimacy required for success when they lack foundation in the local normative world?

Second, advocates of conservation can embark on a range of measures that aim to change government policy, improve the professionalism of project and park management, enhance law enforcement, raise environmental awareness, elicit participation and voluntary compliance, etc. Many of these aims are worthwhile and necessary in themselves. But can they ever lead to success if the 'wider institutional milieu' is dedicated to achieving precisely the opposite sort of outcomes?

In theory, external interventions that offer economic initiatives and improved rule enforcement might provide better incentives for resource conservation. However, external interventions based on this abstract logic can fail, and they often have. This is because effective institutional arrangements require vigorous forms of authority that provide for legitimate modes of

resource control (Brechin *et al.* 2002; Wilshusen *et al.* 2002). The problem then resides in the process of deriving and sustaining legitimacy and power: creating effective resource regimes that derive their legitimacy within the local normative world, providing clear, accountable and successful forms of authority, and ensuring that resource control inclusively meets the needs of diverse actors. Otherwise, political and economic exclusion can only lead to failed cooperation and resource degradation (cf. Robbins 1998). In simple terms, the project was not able to engage in the type of process required. To be sure, the language of participation and inclusion has long been a part of project design. But, too often, this language is tied to inappropriate state policies and project designs imposed from the outside. In the Lesuer case, the outside intervention was further debilitated by unaccountable state agencies in partnership with entrenched local networks of resource control.

If local forms of power, authority and legitimacy are to be developed for environmental ends, proceeding in the manner suggested may help lead to better results in landscapes such as Leuser. Arguably, more modest approaches hold out the promise of better outcomes than those provided by majestic preservationist models that lack support among the population and which foreign-supported conservation agencies and the state are incapable of implementing.

Summary

This chapter analyses the broad policy challenges facing biodiversity conservation in Indonesia, while situating these within the context of a case study involving the Leuser National Park in North Sumatra. Leuser had witnessed an innovative move away from the traditional ideas of protected-area management to a co-management system providing incentives for local officials and communities. The authors critically assess why co-management has not worked well, and conclude that the preservationist model employed at Leuser suffered from a legitimacy problem in the way it ran against entrenched local patterns of natural-resource control.

End notes

1. 'King Canute on the Seashore' by James Baldwin, *The Book of Virtues*. http://www.inspirationalstories.com/0/91.html
2. Spanning two major biogeographical regions (Indo-Malaya and Australasia) and encompassing some 17000 islands, Indonesia is a major world centre for biodiversity. In economic terms, Indonesia's biodiversity is extremely valuable. Its forests alone provide the nation with its most profitable exports after oil and gas. In addition, an estimated 40 million people are directly

dependent on biodiversity for subsistence. Twelve million people live in and around forests and many more are dependent on coastal resources. It is the poorest rural people who are most dependent on biodiversity and natural habitats for their livelihoods and it is they who suffer first and most when those habitats are simplified, degraded or otherwise impoverished (Albar 1999). The sustainability of sectors such as forestry, agriculture and fisheries, health care, science, industry and tourism depend directly and indirectly on the diversity of natural ecosystems and the environmental functions they protect.

3. As Article 33 of the 1945 Constitution states: 'land and water and the natural riches contained therein shall be controlled by the State and shall be and made use of for the people'. Taking this Article further, the Forestry Law (UU 11/1967) extended this claim: Article 5 stated that 'all forests within the territory of the Republic of Indonesia, including the natural resources they contain, are administered by the State'.
4. The Biodiversity Action Plan and Agenda 21-Indonesia are voluminous documents. While it is not possible to cover the complete range of suggestions offered by these policy documents, this case study will give a general overview of the policy initiatives recommended.
5. Since 1998, there have been widespread disputes over land ownership. While the forced alienation of land for nucleus and commercial estate purposes was largely unopposed during the New Order, the original land owners have vigorously sought to reclaim these areas under the far more democratic reform era. Many communities displaced by these developments moved into neighbouring protected forest areas. These conflicts should also be viewed, however, as stemming from growing land scarcity (Zen *et al.* 2003).
6. Figures for the rate of deforestation vary 'depending on the sources and methods of analysis', the most accepted estimates range between less than 600000 ha to 1.3 million ha per year (KLH & UNDP 1997:364). According to Sunderlin and Resosudarmo, this wide discrepancy is due to the lack of reliable primary data regarding forest cover change and the lack of clarity over what constitutes 'deforestation', leading to severe distortions of the issue (Sunderlin & Resosudarmo 1997).
7. IUCN Red List of Threatened Animals 1996 (Newman *et al.* 1999).
8. Estimates of the area burnt vary up to 10 million hectares of forest and agricultural lands. For a discussion of this see McCarthy (2000).
9. Thanks to Dr Susan Moore for assisting with the analytical framework for this policy analysis, which was first developed as a case study for the Institute for Science and Technology Policy, Murdoch University.
10. Policy instruments differ in terms of their appropriateness for a particular situation. While some instruments more effectively carry out a policy, others may be more efficient in terms of the financial costs and the number of personnel involved. Moreover, some instruments attract greater support from the population, for instance, because of prevalent cultural norms or institutional arrangements. Such tools enjoy greater legitimacy. At the same time policy instruments have distributional effects, and policy makers may prefer

policy tools that are more equitable (Howlett & Ramesh 1995).

11. Other key laws include a new law on forestry (UU No. 41/1999) and a government nature conservation regulation (PP 68/1998 Suaka Alam dan Kawasan Pelestarian Alam).
12. BAP recognized that the 40 million people living in forests or depending on resources in the 'public forest estate' are the '*de facto* forest managers'. This means recognizing their rights to land and resources and working with them to develop sustainable systems of forest management, land restoration and agrosilvicultural production for both local and national needs. If forest-dwelling and forest-dependent communities are to play an active role in biodiversity conservation and management, they must have a decisive voice about resource use in their area (BAPPENAS 1993:43).
13. In 2001, the national consultative assembly (MPR) issued a decree (TAP MPR No. 9/2001) stating the need for review of all laws on natural resources management and the formal recognition of customary rights. While this decree recognized the need to reform the legal framework for land tenure, spatial planning and forest management, to date it has not led to new legislative initiatives in this area.
14. Replacement regulation for basic law No. 1/2004 concerning mining in protection forest (Peraturan pengganti undang-undang (Perpu) No. 1/2004 tentang Usaha Pertambangan dalam Hutan Lindung).
15. Where the people are living below the poverty line, a short-term incentive is the most important tool. Concrete developments are more important than abstract promises of future development (e.g. a future tourist resort) or illustrating the biodiversity value of the area as a source of germ plasm or scientific research, or carbon sequestration, etc. Project activities to increase income by training, for example, will help develop community understanding of why national parks are important for them.
16. Integrated conservation and development approaches cannot stop access to the protected forest, especially if project implementers do not understand the value of forests to local people. Providing economic incentives will not be enough if the protected forest has social and cultural values. For example, the Kubu people (Suku anak dalam) in Jambi and Riau see forests as their own habitat. Consequently, when government agencies developed housing and livelihoods (in a similar fashion to transmigration programmes) and left the people without education and training for a better life, the houses and plots became abandoned within a year.
17. In theory, providing surrounding communities with business skills unrelated to forestry activities (e.g. textiles, motor mechanics or organic agriculture) may increase income as an alternative to traditional incomes, providing important strategies to lessen pressure on conservation areas.
18. Scientists have demonstrated that the Leuser Ecosystem contains more than 4500 species of plants, 434 species of birds, 392 species of mammals, 171 species of reptiles and amphibians,

350 species of insects and 81 species of fish (Leuser Management Unit Data Base 2002).

19. This is discussed in more depth in McCarthy (2006).
20. By 1995, the figures had doubled to 653820 hectares of forests destroyed and 262640 hectares of forest land deforested, see *Tempo*, The Vanishing Pines in Leuser, 12–18 January 2004.
21. The designated 'Leuser Ecosystem' extends from Lake Laut Tawar in the Gayo highlands of Aceh to Lake Toba in North Sumatra, covering a total area of 2.6million hectares and 15 regencies. It encompasses 890000 hectares designated as national park, including the 729000-hectare Gunung Leuser National Park.
22. Leuser special status was established by Decree No. 227/Kpts-II of the Ministry of Forestry in 1995. Later in 1998, this was confirmed by Presidential Decree No. 33/1998, further affirming its importance as a zone with biodiversity of great value and specifying the LMU's role in its management.
23. For instance, the LMU's 1997/98 annual report noted that 55 microprojects had been carried out in the programme area. Most of these projects were implemented with the involvement of the appropriate *dinas* and monitored by the local Bappenas offices.
24. The ICDP involved using command-and-control functions to keep local people out of the protected areas while offering them economic development outside protected area boundaries to compensate for their lost access.
25. Here, we are discussing LMU activities prior to special autonomy and the renewal of the Aceh conflict. After 1999, Aceh became a war zone and most project and government activities ceased with the exception of the Ladia Galaska project. This was probably possible because the contractors building the road were paying protection money to GAM (the Free Aceh movement).
26. UU No. 5/1990 (on conservation and biodiversity); UU No. 24/1992 (on spatial planning) and UU No. 41/1999 (on forestry).
27. The contents of three AMDAL documents (ANDAL, RKL and RPL) did not match the criteria set by the AMDAL requirements. For example, if the project had changed the direction of construction and been moved to other areas of protected forests, the change should have obtained the president's approval, as required by Regulation PP No. 34/2002. Hence, the local government could have stopped the construction, but it did not. To support the case for construction, the Aceh provincial governor, Abdullah Puteh, issued Decision Letter No. 15/2003 approving the AMDAL assessment and endorsing construction. This was made possible because the Regional Autonomy laws had a higher position compared to PP No. 34/2002.
28. *Tempo*, A Forest Betrayed, 12–18 January 2004.
29. Notulen Dengar Pendapat Umum aliansi ORNOP dengan DPR–RI komisi VII, 7 Mei 2003.
30. *Jakarta Post*, House still divided over Ladia Galaska; 10 June 2004.
31. The State Minister for the Environment was against the project, pointing out that the plan lacked an environmental impact analysis (AMDAL). The development of the road, according to the minister, had violated various

articles of Law UU. No. 23/1997 on environmental management, including article 18 (1), which states that every activity that caused a significant environmental impact must be preceded by an environmental impact analysis. The construction of the road also breached Presidential Decree No. 32/1990 on conservation area management and Law No. 41/1999 on forestry, see *Jakarta Post*, Ladia Galaska prone to landslides, quakes: Researcher, 11 June 2004.

32. Both before and after the inception of special autonomy for Aceh, the LMU budget was in large part provided for developing boundary fencing and joint forest security operations, and for paying LMU's own rangers, elephant patrol units at Arasnapal Langkat, supporting local animal experts, staff and labour costs, and providing for housing and base camp maintenance. The LMU had no power to arrest offenders, only to report them.

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28

Conclusion to Part III

ALAN KHEE-JIN TAN

The chapters in this part provide a stark reminder that biological and sociological imperatives relating to protected areas often become imperilled by badly designed state laws and policies. This is particularly so when these are accompanied by weak enforcement, political jostling among multiple agencies and uncertain demarcations of competence between central and local authorities. All too alarmingly, it often appears that these systemic pathologies are deficient by design, rather than circumstance, such that they induce a culture that encourages the use of both legal and extra-legal means to compromise the ecological integrity of protected areas and the legitimate rights of communities that depend on them.

As identified by the various authors, incentives must be found for governments and local communities alike to recognize the benefits of protected areas. Experiments at co-management can be undertaken and fine tuned to reconcile the various competing demands on protected areas and their resources and to foster multistakeholder participation in the running of national parks and other protected areas. These strategies depend on the creation of incentives for stakeholders to participate in the protection of biodiversity, as opposed to a 'fines and fences' approach that attempts to cut off local communities' access to protected areas.

Looking ahead, it is clear that governance reform issues must continue to take centre stage for protected-area and natural-resource management efforts, both in Indonesia and Malaysia. Central and local governments must recognize

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the need to foster and put into practice greater institutional and policy coordination to create conditions that promote legal certainty, strong law enforcement against vested interests and other forms of transgressors, and fair resolution of disputes, particularly those affecting displaced local communities. The central governments will thus have to tread carefully–while some measure of (re?)centralized supervision can be beneficial in providing harmonized and coordinated responses, this must always be done with extreme sensitivity to the expectations of local government units for their autonomy. In all cases, the central authorities will have no choice but to engage and cooperate with local governments and communities to foster some form of incentive maximization strategy. In this regard, it is critical to have meaningful participation by local actors in decisions that affect their lives. Otherwise, the central governments will continue to face discontent on the ground, with great risks to the sanctity of protected areas and the natural resource base.

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General conclusion

NAVJOT S. SODHI, GREG ACCIAIOLI, MARIBETH ERB AND ALAN KHEE-JIN TAN

Gaining assent to the existence of intimate relationships among biodiversity maintenance, ecosystem services, legal frameworks, political practices, rural livelihoods, customary claims and environmental knowledges is relatively easy. Negotiating agreement on how the relative importance of these factors can be assessed theoretically, and on how the valued goals implicit in the everyday realization of each of these factors in conservation programmes can be balanced practically for the greatest long-term benefit, is extraordinarily difficult. The aim of the Singapore workshop was specifically to bring together natural scientists, conservation practitioners, NGO activists, social scientists, lawyers and representatives of indigenous communities to confront precisely these issues in the regional context of the Malay Archipelago. Constituted by two hotspots, Sundaland and Wallacea,[1] the environmental problems of this region of mega-biodiversity are acute. Yet, it is also a region with some of the greatest cultural diversity and socioeconomic disparities in the world, sustained by some of the highest indexes of corruption and conspicuous lack of congruence between administrative sectors. On the one hand, Brunei and Singapore are among the wealthiest nations of the world on a per-capita basis and possess notable systems of social service provision, although supported by authoritarian developmentalism. On the other hand, Indonesia's profile is not so enviable, with 52.4% of Indonesians living on less than US$2/day (www.earthtrends.org;

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www.transparency.org), thus falling well below the standard set for the 'millennium development goals' declared by the United Nations Development Programme (UNDP) (Fukuda-Parr 2004). Given the institutional range of its federal structure, Malaysia's situation partakes of aspects from both poles of this range. Balancing issues of biodiversity maintenance, socioeconomic disparity transcendence, multicultural accommodation, and legal reform in this region is parlous, rendering consensus on appropriate initiatives problematic, especially when being debated by academics and practitioners from the range of disciplines and organizations represented at our workshop and subsequently in this volume.

Clearly, the contributors to this volume are strongly divided. Many of the authors have quite divergent views on the legitimation of protected areas. For example, Abdul Halim *et al.* (Chapter 9) present The Nature Conservancy's stakeholder model as a solution to the 'commons problem'[2] oriented to the 'greater good' of environmental protection, yet including provisions that still 'ensure fair allocation among users'. However, Suraya Afiff and Celia Lowe (Chapter 12) report that many protected areas in the region – their accusation would include the Komodo National Park run by TNC – have been established without proper consultation with rural communities. So, these communities have come to view biodiversity conservation as an agenda of the global North curtailing their rights to customary lands and livelihoods. Ruddy Gustave and Henning Borchers (Chapter 14) and Maribeth Erb and Yosep Jelahut (Chapter 16) respectively analyze the deaths of two illegal fishermen in 2002 in Komodo National Park, a case also alluded to by Afiff and Lowe, and the deaths of six farmers in 2004 who protested for their right to utilize protected forests in the Manggarai Regency on Flores, Indonesia. A focus on such cases delegitimates the status of protected areas as functioning in the interests of affected communities. Greg Acciaioli (Chapter 18), on the other hand, presents a case study more sympathetically inclined to TNC's attempts to accommodate customary claims to territory and resources within the park management model for Lore Lindu National Park, but notes that participation in co-management schemes on the part of local communities may be motivated by other factors than shared concern for the environment.

Conservationists writing in Part I of this volume argue for the necessity of protected areas for adequate protection of the imperilled biotas in the Malay Archipelago. Even when conceding the sustainability of some local traditional practices, they highlight the fact that some rural communities have been forced into unsustainable exploitation of natural resources by more recent market demands. Despite his predominant orientation to arguing the case for greater recognition of Bajo environmental knowledge and institutional arrangements

to catalyze more effective conservation, Chris Majors (Chapter 17) presents a compelling analysis of an increasing trend of destructive fishing in and around Wakatobi National Park, in part as a response not only to local subsistence demand, but also to global demand for live reef fish. Such methods of destructive, illegal, unregulated and unreported fishing (e.g. explosives, cyanide poisoning) have also been widely practised by local fishermen in Indonesia, Malaysia and the Philippines (Halim 2002; DeVantier *et al.* 2004). The situation is not dissimilar on land. For example, Melvin Gumal and his colleagues (Chapter 4) demonstrate how illegal hunting has resulted in severe population declines and extirpations of charismatic species, including the rhinoceros hornbill (*Buceros rhinoceros*) and the Banteng (*Bos javanicus*) in Sarawak, Malaysia.

However, one of the insights emerging from this volume, particularly evident in the papers of Part III, is the need to look beyond the conflicts of conservation managers, both government officials and transnational environmental NGO players, on the one hand, and local communities and their NGO activist allies, on the other. The continuing antagonism between these parties in the fields of practice, as well as between conservationists and social scientists in the academic arena, appears to be a classic example of displacement behaviour. The negative interactions between biodiversity conservation and the maintenance of rural livelihood (e.g. subsistence hunting in protected areas) are trivial compared to the damage wreaked upon both natural environments and rural communities by ultimate and proximate politico-economic threats, such as political instability, weak governance, civil strife, perverse subsidies, corruption, forestry, fishery, mining, plantation agriculture and logging. As the authors in Part III emphasize, it is the lack of congruence between state and federal legal frameworks and the disparate agendas of different governmental agencies that foster such instability and create the loopholes exploited by local and global entrepreneurial interests creating such environmental destruction.

The threats to biodiversity posed by these major politico-economic drivers are much greater than those presented by the activities of rural communities. More than half of the world's commercial tropical timber originates from Indonesia and Malaysia (International Tropical Timber Organization 2003). Every year, 1.8 million hectares of forest, most of which is primary, are being logged in the Malay Archipelago (Whitmore 1997). In addition to industrial forestry, land is rapidly being converted for commercial crops. About 28% of the land area of Malaysia is now covered by oil palm (*Elaeis guineenis*) and other plantations (Sodhi & Brook 2006). Indonesia has now even surpassed Malaysia in the area of land devoted to oil palm plantations, although Malaysian enterprises own a large proportion of these plantations. More than 800000 tons of fish are extracted from the archipelago's fresh and marine waters annually by the

fishing industry (Silvestre & Pauly 1997). Furthermore, increasing international demands for exotic wildlife have commercialised the regional wildlife trade that is actively managed by opportunistic middlemen in the region in a network that parallels the international organization of the live reef-fish trade in marine environments.

At its conclusion, despite continuing divergence in some positions, particularly concerning the mutual acknowledgement of environmental knowledge paradigms and the adequacy of customary institutions for environmental protection, participants in the Singapore workshop did agree to move beyond academic debates of 'peoples versus protected areas' to address the larger framework of the governance of natural resources and protected areas, promote the involvement of civil society, and work toward the improvement of quality of life and sustaining of livelihoods. Thus, the rationale for biodiversity conservation should encompass both the long-term value of saving imperilled biotas and the maintenance of vital ecosystem services for sustaining rural livelihoods. This should serve as a partial basis not only for reconciliation between conservation biologists and social scientists, but also for the combined arguments of both to the governments to pay heed to the emerging biodiversity and rural livelihood crises and put into place internally consistent legal frameworks that can adequately address such crises. Biodiversity loss is expected to exert an adverse impact upon humanity through the loss of services provided by natural ecosystems, including climate regulation, flood protection, crop pollination and cultural value (Daily 1997; Balmford & Bond 2005). The catastrophic loss of life and property brought about by the Asian tsunami on 26 December 2004, which could have been lessened had the mangrove forests not been cleared on the affected islands, is a tragic example (Danielsen *et al.* 2005) on a large scale; on a somewhat smaller scale the disastrous floods almost exactly two years earlier in the Palolo Valley after years of stalemate concerning the occupation by resettlers of the Dongi-Dongi watershed area, a core zone of the Lore Lindu National Park, demonstrate the particular relevance of addressing the livelihood needs of local communities, including non-indigneous peoples, around protected areas.

The overwhelming threats to both biodiversity and humanity are megadrivers such as commercial logging, agribusiness, mining and civil strife, whose alleviation urgently requires a synergistic response whose formulation requires biological, social-scientific and legal perspectives. In addition, it is clear that for tangible tropical conservation, targeted mutual collaborative efforts are required. The goals of all parties to the conservation project – conservation biologists, social scientists, lawyers, transnational conservationists, national and regional NGO activists, local community members – are inextricably

linked, and their joint actions are necessary to mitigate the negative impacts of politico-economic drivers on maintenance of biodiversity, reform of legal frameworks, enhancement of local livelihoods and vibrancy of cultural identities. Conservation scientists must generate better linkages between biodiversity loss and land-use change to counter adverse impacts to humanity through the loss of services provided by nature (Odling-Smee 2005). Social scientists need to measure and convey the effects of such loss of nature's services to rural, peri-urban and urban households. However, conservation scientists must also learn to appreciate the qualitative research conducted by legal scholars and social scientists that is the necessary complement of such quantitative surveys, as the success of practical conservation efforts also depends upon integration of competing environmental knowledge paradigms and consideration of the local identity politics and underlying agendas of legal reform in which conservation claims and policies are enmeshed. Conservation education, conservation enforcement and governance, fostering of alternative livelihoods (e.g. training of locals for employment as rangers and teaching locals English so that they can obtain jobs in the ecotourism industry), poverty alleviation policies (e.g. direct and indirect payments), assessing harvesting of natural products and the cultural as well as material needs they satisfy, sustainable harvesting models (Emanuel *et al*. 2005), and developing higher yields in subsistence and cash-crop agriculture (e.g. through natural pollination) all ideally need multidisciplinary collaboration involving biologists, social scientists, environmental and human-rights lawyers, government agencies, business interests, and, most importantly, the rural and urban community members who constitute civil society. However, engaging these latter constituencies requires attention not only to such largely material projects, but also consideration of how environmental concerns can be accommodated to their aspirations for agrarian justice and local autonomy, factors that in this region are integrally connected to the continuing importance of local notions of custom (*adat*). Without knowledge and appreciation of customary conceptions and practices related to the environment and collaborative integration of these factors into the design of programmes, such measures will be viewed simply as impositions from outside – yet another round of 'coercive conservation' – that do not warrant committed participation. We hope that this collection may help inform the theoretical dialogue necessary to accommodate all these approaches – from conservation biology, legal studies and the social sciences – in a more integrated conservationist perspective and catalyze the collaborative design of participatory conservation programmes that truly engage all parties in a more encompassing and inclusive conservationist project.

End notes

1. See our general introduction for the practical reasons for the exclusion of the Philippines.
2. Actually, such provisions address the problems of 'open access systems', which are particularly salient in marine contexts, rather than 'commons' regimens.

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Protected areas have emerged as major arenas of dispute concerning both indigenous people and environmental protection. In the Malay Archipelago, which contains 2 of the 34 biodiversity hotspots identified globally, rampant commercial exploitation is jeopardizing species and livelihoods. While protected areas remain the only hope for the imperilled biota of the Malay Archipelago, this protection requires consideration of the sustenance needs and economic aspirations of the local people. Putting forward the views of all the stakeholders of protected areas – conservation practitioners and planners, local community members, NGO activists, government administrators, biologists, lawyers, policy and management analysts and anthropologists – this book fills a unique niche in the area of biodiversity conservation, and is a highly valuable and original reference book for graduate students, scientists and managers, as well as government officials and transnational NGOs.

Cover Illustration (clockwise): a local fisherman setting up a fishing net (photograph courtesy of the Raffles Museum of Biodiversity Research); small-scale wood harvest by local people (photograph courtesy of Tien Ming Lee); an example of threatened biodiversity of the Malay Archipelago (white-handed gibbon, *Hylobates lar*) (photograph courtesy of Lian Pin Koh); extraction of fish for food by local people (photograph courtesy of Tommy Tan); an example of fishery bycatch – a threatened soft-shelled turtle (Family: Trionychidae) (photograph courtesy of Tien Ming Lee).

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